

# THE SOUTHERN PLANTER,

## Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts.—*Xenophon*.

Tillage and Pasturage are the two breasts of the State.—*Sully*.

FRANK: G. RUFFIN, EDITOR.

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### SCIENTIFIC AGRICULTURE.

BY PROFESSOR GILHAM.

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Continued from page 68, Vol. XIII.

#### ON THE SOILS PRODUCED BY PARTICULAR GEOLOGICAL FORMATIONS.

In our last number we discussed the subject of the general origin of soils, the chemical conditions necessary to fertility, the most frequent causes of barrenness, &c., and alluded to the fact that the diversities in the composition and other characters of the rocks which form the outer crust of the earth, give rise to great diversities in the character of soils. We are now prepared to consider this branch of our subject a little more in detail, and show what character of soils results from particular rock formations.

There are two great classes of rocks: the stratified and the unstratified, or the aqueous and the igneous rocks. The stratified, or aqueous, were originally deposited from water, at the bottoms of oceans, lakes, seas, &c.; at first they were simple deposits of sand, clay, mud, marl, &c., which were brought into the water by rivers, or removed from the shores by waves and tides, and spread over the bottom in successive layers or *strata*; or else they were deposits of calcareous matter, which resulted from the breaking down of the shelly coverings of countless numbers of shell-fish which inhabited the oceans, or of coral reefs, such as are found at this time in the seas of warm climates. These strata in the course of ages became solid rock; long standing, added to the heavy pressure of the ocean, sufficed to harden some, while others were cemented together by mineral matter, such as carbonate of lime, oxyde of iron, &c., contained in the waters. Thus deposits of sand became sandstones, those of clay and mud became shales and slates, while the calcareous matter, whether it was a confused mass of shells or broken coral, or of fine mud, in which all traces of its origin were obliterated, assumed the various forms of marble, common limestone, or chalk. These deposits, which were made

and solidified long before the creation of man, were at last thrown out of the waters, to furnish by their disintegration the soils which supply food for him and the countless other animals that inhabit our globe. This being the origin of the sedimentary rocks, it will not be a difficult matter to determine the general character of the various soils produced by them. It must be remembered, that since most of these rocks were deposits made in the bottom of the ocean, they must all of them contain small quantities of all the substances found in the waters of the ocean.

Sandstones necessarily yield sandy soils. When they are composed almost exclusively of silicious particles they produce very barren soils, little else than drifting sands; but if the sand is mixed with more or less foreign matter, then the soils are fertile. Some sandstones contain large quantities of carbonate of lime: in such cases the soils are always more or less fertile—sometimes they are very much so. Dark colored sandstones get their color from the presence of oxyde of iron, which we have before seen is useful to the soil in various ways. Sandstones are comparatively soft, and yield readily to atmospheric influences; hence sandstone soils are generally deep.

Shales and slates produce clay soils, which are sometimes very stiff and wet, and consequently cold and hard to work. But since these rocks were formed by the deposition of sediment, which must have been derived in most cases from a variety of sources, it follows that the soils which result from them should contain every thing necessary to fertility. That such is the case is shown by the fact that some of these stiff soils are, by proper management, such as draining and careful cultivation, made very productive.

Limestones produce soils of almost every shade of fertility. Some limestones are soft, and break down readily, forming deep soils, while others which are hard wear away very slowly, and produce very thin soils. They are, however, of pretty good quality generally, and are well suited to pasturage. Some limestones disintegrate as other rocks do, forming soils in which the carbonate of lime is abundant; and at first sight it would seem as if all limestones should yield soils rich in calcareous matter, or be true calcareous soils; but such is not the case. Many limestones ar-

reduced to soil by the entire removal of all their carbonate of lime by running water charged with carbonic acid. The carbonate of lime being thus removed, the soil results from the clay, sand and other impurities of the rock. This explains how it is that limestones often produce very stiff clay soils, in which not a trace of lime in the form of carbonate can be found. Most limestones, particularly those which are impure, contain more or less lime in combination with silica, as silicate of lime, which is left in the soil after the carbonate has been removed by water; so that many limestone soils, which will not effervesce on the application of an acid, are nevertheless abundantly supplied with lime. This is the case with the soils of the Valley. Limestone soils are, as a general thing, well adapted to grazing and the dairy; this is because the grasses are lime plants, and always succeed best where the soil is well supplied with lime. As limestones result from accumulations of the shells, &c. of marine animals, they generally contain a small percentage of the phosphates, which of course are left in the soil when the rock is reduced.

There is still another class of stratified rocks deserving of notice in this connection, as large areas in Virginia are covered by rocks of this class: we refer to what geologists call the *primary* stratified rocks. These rocks are often very hard, are crystalline in their structure, and are evidently a class of rocks which were originally deposited from water, as those we have been discussing were, but have at some subsequent period been subjected to great heat, by which they have been very much altered. This heat, while it was not sufficient to melt the rocks, was sufficient to soften them to the extent necessary to allow the particles to assume new combinations, producing as they cooled a great variety of minerals, some of which are very beautifully crystallized. These rocks produce almost every variety of soil, from the most fertile to the sandy waste; and a knowledge of the predominant mineral substance or substances in the rock, will enable us in most cases to arrive at a pretty fair estimate of the quality of the soil, and will serve to direct us to specific deficiencies.

The first of these rocks in the ascending scale is *gneiss*, more commonly called *granite*. It is a combination of the three minerals, quartz, felspar and mica, cemented together, as it were, and differs from true granite principally in this, that it is a stratified rock, altered by heat, while granite is a true igneous rock, one that was once in a state of fusion. The different minerals which compose this rock may be readily distinguished from each other; the quartz occurs in the form of hard transparent crystals, embedded in the felspar, which is softer, opaque, and usually of a whitish or light pink color; the mica, generally known through the country

under the name of *isinglass*, appears in shining scales of various colors, as green, black, &c., very soft and easily picked out by the point of a knife. Two of the constituents of gneiss, quartz and mica, are scarcely acted upon by the atmosphere; but the felspar, which is a combination of silica with alumina and potassa or soda, is slowly acted upon by the carbonic acid of the atmosphere, and the rock is gradually decomposed. The carbonic acid decomposes the silicate of potassa or soda, and forms the carbonate of one or both of these bases, which is very soluble, and removed almost as rapidly as formed, while the silicate of alumina is left in the form of clay.

When the felspar is decomposed the quartz and mica fall apart, and are mingled with the soil, the former making it more or less sandy and gravelly, the latter sometimes appearing in fine shining scales, producing what is sometimes called *isinglass* soil. If the country is mountainous or hilly, the sides of the hills will be sandy, while the valleys will be fine, stiff and cold clays. Soils formed from gneiss rocks generally have a sufficient supply of the alkalies, but are almost invariably deficient in lime.

Above the gneiss we have a series of slates, such as *hornblende* slate, *mica* slate, *talco* slate, and *clay* or *argillaceous* slate, together with *epidote* rock, *quartz* rock or *gneissoid* sandstone, and *primary limestone*.

Hornblende slate derives its name from the predominance of the mineral hornblende, a dark colored or black mineral, which is composed of silica, alumina, oxyde of iron, magnesia and lime; its varieties contain quartz, felspar, mica, &c. This rock, when it disintegrates, leaves its alumina, lime, magnesia, and oxyde of iron in the soil, which make it very fertile, the oxyde of iron at the same time giving it a deep red or brownish red color. In the disintegration of rocks containing hornblende, some of the mineral usually escapes decomposition, and breaks down to fine black sand. The presence of this sand in the soil is, to those who have carefully observed it, a sure evidence of fertility.

The mica slates are composed of quartz and mica principally; from what has been said in relation to gneiss, it is plain that they must produce most unpromising soils.

The talco slates owe their name to the presence of talc, a mineral which splits into thin, inelastic laminae, has a peculiar greasy feel, and is composed of silica and magnesia. *Stealite*, or common *soapstone*, is a variety of this rock. Soils from such rocks are apt to suffer from an excess of magnesia, and are at the same time deficient in several important particulars.

Epidotic rock owes its name and color to the presence of *epidote*, a mineral of a light green color generally, which resembles and has been taken for copper ore; it is composed of silica, alumina, lime and the oxyde of iron. The proportions of lime and alumina are

usually more than in hornblende; the soils produced are of a rich red color, plentifully supplied with lime, and often more fertile than those from hornblende rocks.

Quartz rock, or gneissoid sandstones, and primary limestones, produce soils very much like those produced by some of the sandstones and limestones already discussed.

The rocks which compose this primary series may all be regarded, with slight exceptions, as combinations of quartz with other minerals, which, when examined chemically, are found to be silicates of one or more bases. When it is a simple silicate of but one or two bases, as in felspar, the resulting soils are apt to be deficient in some one or more constituents necessary to fertility; but when the silicate is one of several bases, as in hornblende, and when, as is most generally the case, there are small quantities of some of the other silicates present, the soils produced are fertile, and some of them eminently so. As a general thing, those rocks of this class which contain a sufficient quantity of oxyde of iron to give the soil a dark red color, also contain a sufficiency of lime, magnesia and the alkalis; while those that are so destitute of iron as to leave a light colored soil, are almost invariably deficient in lime, and not unfrequently in the alkalis also. There are a few rocks which form exceptions to the first of these rules, the minerals which compose them containing some combination of iron, with no lime, or at most mere traces of it; of some of these we will speak further on.

There is but a very small portion of Virginia covered by true igneous rocks, still it may not be amiss to say a few words in relation to them and to the soils produced by them. These rocks are of two kinds: the primary igneous, including granite, sienite, &c., and the trap rocks.

The granites are composed, like gneiss, of quartz, felspar and mica; the felspar in these rocks, as in gneiss, is attacked by the carbonic acid of the air, and in time stiff cold clays occupy the valleys, while the hill sides are poor and sandy. Sienite is a rock composed of quartz; felspar and hornblende, or granite passes into sienite by the substitution of hornblende for mica. Sienite is generally taken for and called granite, but by careful examination the hard black crystals or grains of hornblende may be distinguished from the scales of mica. In the decomposition of the sienitic rocks, the hornblende as well as the felspar is decomposed, producing dark colored fertile soils.

Some of the primary igneous rocks of Virginia contain very considerable amounts of the mineral epidote before described, which by their disintegration yield soils which are often very fertile.

The trap rocks differ materially in composition from the primary rocks; they are composed principally of felspar and hornblende, the latter mineral giving them a dark grey or

green color usually. The proportions vary considerably, giving rise to several varieties, such as basalt, greenstone, &c.; the soils formed from these rocks are generally very fertile, and some of them are unsurpassed.

From the above brief description of the rocks which compose the crust of the earth and of the soils which they produce, it will be seen that a knowledge of the rocks of a particular district is of the utmost consequence to the agricultural community, as it points directly to the cause or causes of infertility, wherever they exist, and also serves as a guide to judicious improvement. Many of the States of the Union have had complete geological surveys made, and have published detailed reports, with maps, sections, &c., so that every farmer may become familiar with the geology of his own neighborhood. In our own State, surveys, and very complete ones, have been made, but the legislature does not see fit to complete the work by appropriating money for the publication of the final report upon our geology.

In this connection, it may not be amiss to close with a few words upon the distribution of the various geological formations over the State.

Commencing with the tide-water region, we find this to belong to what is known as the *tertiary* period of geology, or the period which immediately preceded the placing of man upon the earth. Instead of a formation of solid rock, we find a succession of strata of sand, clay, marl, &c., and find them almost horizontal in position. The strata contain the remains of many shell-fish, sharks, &c., which show that the strata were depositions at the bottom of an ocean, which must have had its western shore somewhere in a line with the falls of the large rivers, as the James at Richmond, the Rappahannock, at Fredericksburg, &c. Before any solidification took place in these strata they were raised out of the waters, and so gently raised as scarcely to disturb them in the least.

The soils of this entire region are, we believe, uniformly light, and from the great benefits experienced from the use of lime and marl, must, as a general thing, be greatly deficient in lime.

The entire country, from the falls of the large rivers, or from the head of tide to the Blue Ridge, is covered with the primary stratified rocks. We must, however, except a few patches of igneous rocks, and two or three belts of fossiliferous rocks of a much more recent date than those they are found to overlie. Over the different parts of this widely extended area we have every possible variety of primary stratified rocks, producing soils of every degree of fertility. Many counties are covered almost entirely by gneiss, or rocks of a gneissoid character, and their soils are rarely productive, being generally very light colored, deficient in lime, magnesia, &c. Some varieties of gneiss contain very

considerable amounts of the bi-sulphuret of iron, which appears as bright yellow specks in the rocks; this undergoes decomposition, and communicates a more or less red tinge to the soil, furnishing an exception to the rule that the presence of iron in the primary rocks is an evidence of the presence of lime, magnesia, &c. in the soil. Large areas are also covered by the various slates, and with rocks which partake of the characters of two or more of them, each and every one giving rise to a soil which is characteristic of the rock which produces it. In this primary region there are large extents of country, covered by soils of a dark red color, which, as we have before stated, result generally from the disintegration of rocks containing hornblende or epidote, and such soils rarely fail, in their virgin state, to be abundantly supplied with lime, magnesia, and the alkalies. But if the dark color of the soil results from decomposed sulphuret of iron, or from other minerals than hornblende or epidote, the soil is apt to be sterile, although it would be thought rich from its color.

In various portions of the primary district we have protruded patches of granite, sienite and trap rocks, and wherever they occur the character of the soil is modified more or less. We also find in several places a series of stratified rocks, of a much more recent date than the primary, and overlying them. A belt of this formation commences in Orange, and, continuing parallel to the Blue Ridge, runs up into Maryland; another occupies a part of Chesterfield, Hanover, &c., running nearly parallel to the one first mentioned; there are also detached portions of this formation in Buckingham, Campbell and Pittsylvania.

Much of this formation is sandstone, which produces by its disintegration the most sterile soils perhaps that are to be found in the state. The formation changes somewhat in its character as it approaches the Potomac, but we are not able to say whether the soils are ameliorated by the change.

The Blue Ridge itself is, from one border of the state to the other, composed of igneous rocks. After what has already been said, it is not necessary to speak of the soils produced by their breaking down.

After crossing the Ridge, we come upon a succession of stratified rocks, embracing almost every variety of sandstone, limestone, slate, &c.; in proceeding westward from the Ridge, we come upon them in regular succession, commencing with the oldest, which flanks the Ridge, and terminating, after crossing the Alleghanies, in the great coal formation, the last in the series. The first in the series is a fine white sandstone, which occupies a narrow belt on the western slope of the Ridge; it produces a light, sandy, and generally a poor soil. The second formation in the series, and one of great consequence, is the limestone, which occupies the entire

length and most of the breadth of the valley; it produces clay soils which are generally fertile, and some of them are eminently so. From the Valley westward, until the Alleghanies are crossed, there are great diversities in the rocks, caused by their being turned more or less upon their edges, or *dipping* very much to the west. The ridges are frequently sandstones, while the valleys are often occupied by limestones, producing soils well fitted for grazing. West of the Alleghanies, the rocks, which, as we have before stated, belong to the great coal formation, are spread out more nearly in a horizontal direction, producing greater uniformity in the soils. The immense forests of Western Virginia very plainly indicate what the character of her soils must be.

The following article was written previous to the adjournment of the Legislature, and has been long in type. It may be now not well-timed, and perhaps some of the remarks may be less appropriate than they were then:

For the Southern Planter.

#### THE INSPECTION LAWS.

Inspections were originally established to facilitate trade and to guard against frauds, but they have been perverted in some instances so as to operate just the reverse—to obstruct trade and to legalize fraud. The appointment of inspectors, instead of being vested directly or indirectly in the local authorities, who can best judge of the respectability and qualifications of candidates, and who are, as members of the community, interested in sustaining the character of their inspections, is placed in the hands of an Executive, elected on political grounds and expected to exercise his patronage accordingly. Consequently the criterion of qualification of an inspector is apt to be, not whether he is well versed in the quality of the article he is to decide on—not whether he is a man of high moral character, but whether he is a Democrat or a Whig, accordingly as the one or the other party happens to be in the ascendant, and how many votes he can influence for his party. All other, and most essential qualifications are but secondary. Is not this felt and known by proprietors of some large establishments, erected at great expense for public purposes?

The requirements of the inspection laws in some cases are not or cannot be carried out—for example, *all* fish barrels are required to be of the capacity of not less than twenty-eight gallons to pass inspection. They are now brought to market of less capacity, and do pass inspection with the qualification of "under size"—how much or how little, the buyer must judge for himself. The very process of

inspecting pickled fish is objectionable, because the exposure and loss of brine causes them to spoil the sooner, and as the month and year of inspection is not branded on the barrel the inspection is worse than useless, and is a tax on the consumer. In fact, the purchaser relies much more on the representation and respectability of the vendor than on that of the inspector, however correct he may be.

Without inspection, he would have recourse on the vendor if he sold him an unsound or inferior article as a sound or good one; and the old adage that honesty is the best policy is applicable to the great mass of dealers who wish to retain their customers, if they are not influenced by higher motives.

The recent introduction of guano was seized on to constitute another inspection. The parties most interested do not desire it, and are unnecessarily taxed—for what? A cargo of 2000 or 3000 bags arrives from Baltimore or New York, where they were filled under inspection on board ship direct from the Chincha Islands or some other designated place, as represented and guaranteed by the importer and the sub-vendor. The continuance of the demand and success of the trade depends entirely on these representations being correct. The article cannot be adulterated on board ship, nor even on shore without detection; nor is there any inducement on the part of large dealers to deteriorate the quality, if it were practicable, and thus destroy their traffic. The inspector calls and takes a sample from two or three or more bags—decides on the quality of the 2000 or 3000—has his mark placed on the whole, and pockets his fee.

Now if fraud was intended, does this prevent it? Does it not legalize it? If the inspection of one bag is necessary, so is that of all—and if adulteration is intended, it can as easily be effected after inspection as before it. Wherever done it would betray itself. The inspection to be useful, should test every bag correctly.

That the inspection of guano and plaster, as at present conducted in Baltimore, is worse than useless is shown in the following extract from the Report of the State Chemist of Maryland, contained in an article published in the Baltimore American, embracing also some other interesting paragraphs, which are here inserted:

**“STATE CHEMIST’S REPORT.—**We have received, through the attention of B. D. Daniels, Esq. of the House of Delegates, a copy of the third Report of Dr. Jas. Higgins, State Agricultural Chemist, to the Legislature of Maryland. The report occupies one hundred and sixty closely printed pages, and abounds with information bearing on the agricultural interests of the State. The contents of the report are thus classified by the author:

“I shall in this report first consider the origin and the mode in which soils have been formed; 2d. Their composition; 3d. The conditions on which the fertility of the soil depends;

4th. The nature and mode of action of different manures; and under this head shall offer such suggestions as the nature of the case demands, in relation to their inspection; 5th. The analysis of those soils, from different parts of the State, which are of general utility; 6th. A particular description of the various soils, limestone, marls, and other economical advantages of Washington county.”

“The subjects discussed under these general heads are minutely sub-divided, and whilst the leading idea of the necessity of a close connection of chemical science with agricultural labor is preserved throughout, a mass of well-attested facts is presented that must be of great practical use, even to those who may dissent from some of the conclusions arrived at. In relation to the necessity for experimental farms, to show where careful analyses of soils are made—applied manures carefully analyzed, and the crops carefully measured and weighed,—and the results *frankly* and *truthfully* given, Dr. Higgins makes the following gratifying announcement:

“I am happy to inform your honorable body that all, and more than all, which can be accomplished by an experimental farm, at the public expense, I have made arrangements to accomplish, by the aid of several public spirited gentlemen of our State. Dr. Maddox of Washington county, Hon. F. P. Blair of Montgomery, Mr. T. S. Igelhart of Anne Arundel county, James Wallace, Esq. of Dorchester, T. S. Holliday of Talbot, Dr. J. H. Turner of St. Mary’s, have each agreed to set aside a portion of their farms for a series of carefully conducted experiments with different manures on different crops. These experiments will embrace: The analysis of the soil—the analysis of the manure—the time and mode of its application—the mode of cultivation—the exact product of the land, and the state of the season. These facts will be most important to the people of Maryland,—they will form the first and only experiments yet made in our State, or elsewhere, where all the causes influencing the production of a crop will be estimated, and the separate value assigned to each.

“The well known intelligence, care, and integrity of these gentlemen are guarantees that their statements can be implicitly relied on—whilst the different variety of soils owned by them will make their observation of extended public utility.”

“The present system of guano inspection is closely examined, its defects pointed out, and remedies proposed. On these points, the report says:

“So manifestly inferior has some of our No. 1 guano been to a practiced eye, that it has been returned to the merchant, as was the case of a part of the Howard’s cargo. It was bought by several gentlemen of Kent county, and returned to the merchant, because deemed by them very inferior, by whom it was sent back, and a supply sent from another cargo.

Yet it bore the mark No. 1, and by that mark was sold to somebody else, ignorant of its defects, who thus paid for an inspection, and on account of that, paid at least \$16 per ton for an article worth only \$33 75. I need not point out all the defects of the present inspection; to many of you they are already known. From the above it will be seen that it has fulfilled none of the requisites of an inspection; it has not been "an impartial umpirage between buyer and seller;" it has been no arbitration between producer and consumer; it has not shown the quantity of valuable matter in the article inspected; it has, instead of protecting the consumer, misled him to give a high price for an inferior article. It has, by not showing uniformity in that bearing the same mark, deprived him of the benefits of his experience; for, though a particular quantity might be applied with profit one season, the same quantity might be useless in another, though bearing the same mark, because of very inferior quality. It has prevented the purchaser from investigating for himself—exacted his money and given him less than nothing in return. The question, then, is, ought the inspection be modified as proposed in a bill which passed the House of Delegates, and whose principle was not objected to in the Senate, making the inspection show the quantity of valuable matter in the article inspected? or ought it to be abolished? I refer to my last report for reasons for the inspection laws which I then recommended. If it be abolished, the agent has stated to me that he will separate the damaged from the undamaged guano. Certainly, no change will be for the worse.'

"The objections against the inspection of ground plaster are thus stated:

"First. That it is no umpirage between buyer and seller.

"Secondly. That it is partial in its operation, and acts with discrimination against those who are obliged to deal in Baltimore.

"Thirdly. That it does not show in any manner the quality of the article inspected; that it does not show, nor pretend to show, the quantity of plaster which is contained in the barrel.

"It, therefore, does not fulfil any of the requirements of an inspection in its operations, is unjust, inefficient, and partial, and ought to be abolished.

"The quantity of ground plaster annually sold in Baltimore is about 30,000 barrels, and steadily on the increase."

"We commend the report to the attention of the agriculturists of the State; and we hope that the Legislature will make provision for its liberal distribution."

Lime is another article taxed heavily and uselessly by inspection—about three per cent. on its value in casks, and more if loose. The inspector is to brand on each cask "slacked" (meaning slaked) or "unslackened," and 1st, 2d or 3d, but as no date is required to be branded on it (which might be simply done with a few

figures, as 12, 3, 3, for 12th March, 1853,) the purchaser has to depend on his own judgment, not that of the inspector, to see if it is slaked or unslackened. The size of the cask in this case, as in that of fish, is prescribed by law, but the Thomastown folks consult their own interest or convenience, and here again, perhaps, the indefinite "under size" has to be adopted. Is it not presumable that every builder and other purchaser looks to the quality and condition of the lime he purchases? and it is well known that the lime brought from the north in bulk for agricultural purposes is not submitted to inspection—which would be a tax of 14 to 16 per cent. on the cost.

If it be necessary to inspect lime and plaster of Paris, why not also to inspect each sack of salt that arrives from Liverpool and bacon from the west and north, and nails and licorice as well as tobacco, of which it now constitutes a large component in the process of manufacture. Why not inspect every article in general use!

A more important article than any yet mentioned is obvious to remark. The inspection of flour embraces many useless and injurious requisitions—and the only parties exempt from their evils are the bakers and consumers in the State. They may buy their flour on their own judgment, without having the barrels bored and an air hole made through the contents.

An inspection of flour is, no doubt, necessary, but where the buyer and seller choose to dispense with it, they should be permitted to do so, as in New York. It is well known that Virginia flour, and particularly that of the mills at Richmond and of several others up James river, is preferred to any other for shipment to Brazil and to all markets on the Pacific, which have of late become very important. The United States Navy Department, in procuring flour for the Pacific squadron requires that the barrels shall not be bored, but as the inspection law says they shall, it becomes necessary to seal up and cover with tin or lead the inevitable auger hole. Shippers to all these ports would prefer the same course, and would rely on the miller for the quality. Nor could the character of the inspection suffer when there was no inspection mark. But according to law the flour must be rendered liable to injury on a long voyage by having a hole bored in the barrel and a certain quantity of flour extracted from it.

Since the opening of the California market, it has been found advantageous to put flour up in bags of 49 lbs. and 98 lbs.—equal to one-fourth or one-half barrel, for the convenience of transportation into the interior and mountainous region—but here the inspection law puts in its veto and relinquishes this advantage to the millers of New York and Boston—for Boston now has its mills. The practice has been introduced and allowed for the inspector to draw forth one augerful of flour, which he

does not look at, but retains as a perquisite, and then to draw a second, by which he judges the quality, and also retains that. Query—would not one be all sufficient? The inspections of flour in Virginia have generally been well conducted, but the parties who deal in the article should be allowed to exercise their own judgment and to keep their packages perfect if they prefer it.

As to the inspection of tobacco, it is antediluvian, when the present state of that trade is considered. It was very well formerly, when the buyer looked only at the inspector's receipt, and which could be issued only for *sound merchantable leaf or stemmed tobacco*—but now the purchaser sees the tobacco itself, or a sample of it, and does not care a jot for the opinion of the inspector, who is now bound to give a receipt for all sorts, good and bad. Leaf and lugs and ground leaves—primings and succors—distinguishing them as “passed”—“refused,” or “too high”—which has no influence on the buyer, nor does it prevent the exportation of the very worst trash. Of what use is such qualification?

If tobacco, brought from any western State, is offered for inspection in Virginia, the words “WESTERN TOBACCO,” in large characters, must be marked on the cask, by way of stigma, that it may not degrade Virginia, to which, in a majority of instances it is probably superior, as it does not embrace primings, succors and the meanest trash which would not bear the expense of transportation. But the impolicy of this distinction is most obvious. We are now authorizing the expenditure of millions to open a communication with the great west that we may attract its products to our market and we endeavor to degrade one of those products, the very one most likely to seek a market here.

What a vast and useless expenditure of oil and lampblack and of time also is wasted in painting four times on each cask in characters large enough for a sign board, “refused,” “too high,” “western tobacco.”

There is another requirement of the law which shows a degree of meanness, if not injustice, unworthy of legislative enactment. The hogshead of tobacco must be weighed before it is inspected, so that the planter has the full benefit of the weight of all the dirt that may adhere to it, of the surplus hoops, if any, and of any wet or damage, unless the inspectors are so very careful and particular as to note all these, which is almost impracticable. This injustice is of recent adoption, as are some of the useless requirements, already mentioned. But these are all dispensed with if the tobacco is sent to market in a box or a crate, or a bundle or entirely loose. Then the inspector passes no opinion on it, but it is bought by the manufacturer and prepared for market, as cotton or wool may be.

All that is now necessary for the regulation of the tobacco trade is that the inspector should receive, book and store the hogsheads as they

are brought to the warehouse, and when required, should sample, weigh and mark each hogshead, issue a receipt for it, and when required, deliver it in good order. That he should store tobacco brought from other inspections and sample them if required, stating on all receipts “sampled,” with the date.

If there is damage perceptible on any hogshead inspected or stored, the receipt should mention it—leaving to the buyer and seller to ascertain the extent—and when tobacco is damaged in the warehouse, by exposure or carelessness, the inspector should be responsible for such damage.

In some cases it is desirable to export leaf tobacco in bales or smaller packages than hogsheads, but the inspection law prohibits it, and, therefore, New Orleans and New York have the advantage of such trade.

Again: a planter living on navigable water is prohibited from sending his tobacco to market in a vessel, but he may send it in a wagon. If, however, he chooses to pack it, in twists, in boxes or kegs, he can send it where and how he pleases.

Richmond, March 15, 1853.

For the Southern Planter.

#### DR. BALDWIN'S SHADE THEORY.

*Mr. Editor*,—In the last number of the Southern Planter is a communication from R. T. Baldwin, headed with this question: “Is barn-yard manure indispensable to the preservation of the fertility of cultivated lands?” The Doctor takes the negative side of this question, and urges his favorite theory of “shade” in justification of his opinion. While this side of the question may be sustained by science and practice, I consider that this theory of “shade” is sustained by neither; in other words, while the Doctor's practice as an agriculturist is good, his theory is wrong. This may seem hardly worth contesting; but truth loses nothing by investigation, and science, the more it is looked into and examined, the more it will be found to correspond with good practice in agriculture, and the more it may be made to promote it. And though we may be told that “the practical farmer” “need give himself no concern about the modus operandi,” yet there is an inquisitiveness abroad that wishes to know the why and the wherefore of things, believing that when scientific agriculture is properly understood it will confirm and promote good husbandry.

In discussions upon any subject it is important that there should be a correct understanding of the meaning of the terms used. The Doctor, in assuming the negative of the question proposed, asserts that “even impoverished land may be made exceedingly fertile without the application of manure or

any kind whatsoever." And in supporting his views he states that he considers it a "scientific truth" "that there exists in the soil previous to cultivation a principle of fertility termed mould or humus, indispensable to the growth of all plants." This is a truth that cannot be disputed; and if so, then this principle must be continued in the soil, if cultivation is to be continued successfully. Let us understand what is meant by the term humus. Johnson, in his Agricultural Encyclopaedia, says, "Woody and vegetable fibre in a state of decay, constitutes the substance called humus," and this no doubt is the "principle of fertility" existing "in a soil previous to cultivation," that Dr. Baldwin considers a "scientific truth," yet he afterwards seems to be of a different opinion. He says, "In several numbers of 'The Plough, Loom and Anvil,' I have published the facts which induced the belief that this important fertilizing substance had been erroneously defined by scientific agriculturists. I will not now recapitulate those facts, but will merely remark, that a substance which can be readily formed in an impoverished soil, totally independent of vegetable matter, cannot be correctly defined to be the residue of vegetable decomposition." Now, what is meant by "a substance which can be formed in an impoverished soil, totally independent of vegetable decomposition?" Is it humus, as generally understood by "scientific agriculturists," or is it something else? This should be explained and understood, as an uncertainty in terms often makes a difference where none need be. If this "principle of fertility," acknowledged to "exist in the soil previous to cultivation," is not the "residue of vegetable decomposition," what is it? I have not had the pleasure of reading the numbers of the Plough, the Loom and the Anvil, referred to by the Doctor, except partially, and may not have seen all the "facts" there presented in support of his theory; but what I have seen may be explained on known principles, and does not appear to me to support the theory of shade at all.

Some of these facts, if I remember rightly, were, that if "the surface of the earth be closely covered with any substance whatever it becomes exceedingly fertile," such as piles of stones, brush, leaves, boards, or any such substances. That land so covered will be enriched is certain; but is it not as certain that this enrichment is the product of the decomposition of vegetable matter? Look at a heap of stones for instance; this is a receptacle for vegetable matter carried there by winds, by small animals and insects that harbor there. These latter convey an amount of vegetable matter that would astonish many to see, and would, if continued two or three years, supply an amount of humus sufficient to enrich the ground beneath, even if before impoverished. So with a covering of brush, leaves, boards, or any such substances. Where does the

young angler resort to to find bait for his hook? He resorts to a moist place, and turns up a stone, board, piece of wood, or some such thing, knowing that worms harbor there; and these little insects do more in enriching the soil than many are aware of or are willing to admit.

The fact of rich earth having been found in caves is considered by the Doctor as supporting his theory, and may be what he alludes to in the Planter, where he says, "the earth itself experiences a similar change in locations where vegetation never could have existed." That vegetation never could have existed in such caves is more than probable; but it is not only probable and possible, but certain, that vegetable matter is carried into such places. The great limestone valley of Virginia is known to be cavernous, and during every heavy shower may be seen quite large streams of water running upon the surface, carrying with them earthy and vegetable matters, and precipitating themselves through the cavities of the rocks on the surface into the caverns below. These matters, settling into these caverns, would, if ever they should be brought to the surface, present just such a richness of soil as the Doctor alludes to in support of his theory. Indeed he need not have gone so deeply into the earth; for the same thing is met with in mill ponds and places where earthy and vegetable matters are thrown together, and become enriched even without shade.

If I understand the Doctor, he advances the opinion, and considers it "beyond the possibility of a doubt," that "if the surface of the earth be closely covered with any substance whatever, it becomes exceedingly fertile, no matter how poor originally, nor what the deficiency in its mineral constituents." It is the belief of "scientific agriculturists" that a fertile soil must possess certain organic and inorganic substances. The quantity of each substance is not material, so that a sufficiency of each is present; but here the assertion is made that "no matter how poor or deficient in its mineral constituents," a soil may be made "exceedingly fertile," by merely "closely covering" it. The theory, if I understand it, is, that the earth, in such a situation, goes through a fermentation, and thereby becomes enriched. That soil having a proportion of vegetable matter in it, may, by being placed in such a situation, produce fermentation, is no doubt correct; but that it would produce fermentation without the presence of vegetable matter, is doubtful. There would no doubt be a disintegration of the mineral constituents of such soil, but this disintegration goes on in the surface soil without shade, and is not what I understand by the term fermentation, that precedes the putrefaction of organic matter.

The decomposition and fermentation of organic matter in the soil accelerates and promotes the disintegration of mineral substances,

and as both are necessary in the growth of vegetables we see the beauty and harmony of Creative goodness in making this earth the abode of intelligent beings. The first promoting the second, and that accelerating the first, and so on in succession indefinitely, I have no doubt that the soil of our country may be made to produce an amount of products far beyond what is now realized, and what would be now considered almost incredible.

If Dr. Baldwin will now give his practice in farming through the columns of the Planter, he at least will gratify one, and may enable us to say that we can see good reason to conclude that his practice is good, while we may be allowed to condemn his theory.

YARDLEY TAYLOR.

Loudoun Co., Va., 4th mo., 1853.

For the Southern Planter.

#### ACTION OF GYPSUM ON ORGANIC MANURES.

BY PROFESSOR CAMPBELL, OF N. C.

Certainly one of the most important questions with the farmer, especially in the older States, is this—"how may fertilizers be best obtained, and made most profitable?"

Soils that have been long under cultivation, must necessarily become deficient in many of the elements of fertility, unless the exhausted supply be restored from time to time by proper applications. Without this restoration, farming would soon become a profitless business. Labor cannot bring from a soil what is not there. When you wish your horse to do long and faithful service, you feed him well; if you do not, his strength soon fails, and whip and spur are insufficient to revive his drooping energies. So, plough and hoe are equally inefficient in reviving the energies of a *starving field*. Economy in sustaining or restoring the strength of soils, is no less important than economy in feeding horses and cattle. But, as an abundance of such nutritious food as may arise from the products of home culture is most economical in feeding stock, so the free application of home made manure, *well collected* and *well kept*, is the most economical of all fertilizers. The farmer who goes abroad to buy guano, while he leaves at home masses of manure, from which wind and rain are rapidly carrying off some of the very same elements that give to guano its value, is not acting more wisely, than he who leaves his hay to be drenched with rain and bleached by the sun, while he goes out to buy oats or barley to take the place of hay in his next winter's feeding. Let what you have be made as available as possible; then, if more is needed, it will be time to begin to look abroad for it. After all proper means have been resorted to for collecting and preserving your barn yard, stable and

hog pen manures, ashes, soapsuds, &c., you can better afford an occasional ton of guano for the sake of an extra crop of wheat, and a succeeding "fair set" of clover.

In collecting fertilizing materials for farming purposes, two leading objects should be kept in view:

1. To prevent, as far as possible, any loss of value in the material during the interval elapsing before it can be conveniently applied to the soil. 2. To increase its value, if this can be done profitably.

My present wish is to state briefly, that which others have stated before, but in a different form—what careful experiment dictates as the most efficient means of attaining both these objects.

I am well aware how little confidence farmers, generally, place in chemical theories and laboratory experiments, before their claims have been fully established by the unerring test of *practice*. Hence, for the satisfaction and benefit of those whom it may concern, I have just concluded an experiment independent of laboratory, crucible and retort—an experiment, involving nothing new or remarkable in the eye of one familiar with the principles of chemical science, yet, important in its practical bearing. It was conducted as follows:

A barrel was filled with fresh scrapings from the stalls of horses. Over the manure, as thrown in, a little ground plaster was sprinkled from time to time. After the barrel had been compactly filled, it was allowed to stand some weeks, until it had gone through the heating process, found always to take place when newly collected manure is thrown into heaps. But during this heating or *fermentation*, (as it may with propriety be called,) there was none of that "vapor" of strong odor which ordinarily arises from fermenting manure heaps. When the mass had become cool, clean rain water was passed through it and collected at the bottom of the barrel. This water was found to contain one of the elements\* of plaster, and one of the volatile substances (carbonate of ammonia) above alluded to. On emptying the barrel, a white powder, looking very much like plaster was found mingled with its contents. But, when tested, this powder was found to contain only one of the elements of plaster; while it contained also one element of the volatile carbonate of ammonia just mentioned.

In order that those who are not familiar with the principles of chemistry may understand the foregoing experiment and fully appreciate its results, a little explanation is necessary.

The volatile matter which escapes so rapidly from heaps of manure, and the presence of which is perceived by its odor about stables where horses are fed, is called by chemi-

\* "Element" is not used here in its strict chemical sense.

cal writers "carbonate of ammonia," consisting of carbonic acid and ammonia combined.

Plaster (gypsum) is, according to chemical nomenclature, a sulphate of lime; *i. e.*, sulphuric acid and lime combined. Liebig says, "carbonate of ammonia and sulphate of lime (gypsum) cannot be brought together at common temperatures without mutual decomposition. The ammonia enters into combination with the sulphuric acid, and the carbonic acid with the lime, forming compounds which are not volatile; and, consequently, destitute of all smell." Thus, we get two new compounds; namely, carbonate of lime in very fine powder, and sulphate of ammonia, which is not volatile, and of course not liable to be lost in the same way as the carbonate of ammonia. This sulphate, however, is readily dissolved in water. Hence, in the experiment above detailed, it was carried out in solution by the water passed through the mixed mass of plaster and manure.

What points, now, are illustrated by the results of this experiment? First, that ground plaster sprinkled about stables and over fresh manure, as it is collected into heaps, will arrest the escape of a most valuable portion of the fertilizing matter. Secondly, that if this manure be left unsheltered from the rain, the sulphate of ammonia generated by the action of the plaster will be washed away; and, thus, the sulphuric acid and ammonia, both of which are highly valuable as fertilizers, will be lost.

What has been said above applies equally to all animal manures, and all decaying organic matter from which carbonate of ammonia is set free.

The proper course, then, to be pursued in the management of such manures, is entirely obvious. They should be thrown together in a convenient place—sprinkled with plaster as they are thrown up, and carefully sheltered from the rain until they can be conveniently applied to the soil.

If the farmer who buys guano while he leaves his stable and yard manures exposed, would expend the cost of a single ton of guano in constructing shelters for these manures, he would, in a few years, realize in their increased value, the worth of ten tons of the imported manure with all its remarkable properties.

For the Southern Planter.

#### FALL OF RAIN.

*Mr. Editor*,—I send you for the Planter the fall of rain during the last year. The quantity is so great and the number of days on which it rained so remarkable, that I send you my table in detail. In June, July and August, there was rain on 31 days. In the whole year, on 93 days. In 1850, it rained on 79 days, the quantity being nearly equal in each year. In

1851, on 70 days with about 11 inches less of rain.

It will be observed, that the rains of last year fell at times most unfavorable to the husbandman, delaying very much his planting, reaping and threshing. They damaged the corn crops on low, wet lands—and a great deal of wheat was sprouted and lost in the fields.

Respectfully, your ob't serv't

ED. F. TAYLOE.

#### Fall of Rain in 1852 at Powhatan Hill, King George County, Va.

	inches.	inches.	
Jan'y 3, 0.01 snow	June 29, 0.805		
6, .355 "	30, .72		
18, .34 "			
31, .095 "	July 13, 1.015		4.425
	0.80	14, 1.495	
Feb. 6, .02		16	
11, .435		17	.255
12, .02		25,	.165
13, .035		26,	.08
21, .51		30,	.075
28, .825			4.47
	1.845	Aug. 4, .425	
Mar. 4, .54		5, .535	
6, .08		8, .135	
17, 1.31		10, .62	
20, .02 snow		11, .195	
24, .07		12, .09	
26, .01		17, 1.85	
27, .135		21, .42	
31, .255		23, .025	
	2.42	25, .055	
April 5, 1.965		26, .535	
8, .545		28, 1.16	6.045
11, .01			
12, .19		Sept. 3, .06	
15, .31		10, .13	
18	2.495	11, .86	
19		16, .065	1.015
20			
22, .035		Oct. 10, 1.35	
23, .005		12, .025	
25, .035		14, .75	
	5.59	30, .37	
May 1, 0.045			2.495
12, .145		Nov. 6	
15, .085		7	1.38
17, .025		12, .27	
19, .135		18, .44	
23, .015		22, 1.01	
27, .035		26	1.66
28	.055	27	
29			4.76
	0.64	Dec. 3	
June 4, .135		4	.585
8, .93		9, .075	
16, .82		11, .315	
17, .045		16, 1.25	
18, .135		21, .145	
19, .015		25, .525	
21, .065		27	
22, .225		28	.32
23, .01			3.215
24, .52			

	Inches.		Inches.
In January, -	0.80	In July, - -	4.47
February, -	1.845	August, -	6.045
March, -	2.42	September, -	1.015
	5.065		11.53
April, - -	5.59	October, -	2.495
May, - -	0.64	November, -	4.76
June, - -	4.425	December, -	3.215
	10.655		10.47
Total, -	37.72-100 inches.		
In 1850, - -	37.95	Snows.	
1851, - -	26.93	Jan. 6, 3 to 4 in. deep.	
1852, - -	37.72	" 18, 1½ "	" "

For the Southern Planter.

#### THE EFFECTS OF GUANO.

*Mr. Editor*,—By way of whiling away the tedium of a rainy day, I have taken up my pen to add another laurel to guano. No section of our country has been more benefited by guano than ours; and no where has the face of Nature been more improved by its use. It has, indeed, come among us as a balm in Gilead, binding up and healing the wounds and bruises of our dying mother earth, and giving fresh vigor to the discouraged energies of us—her sons. Away in the interior, far from rivers and rail roads, and beyond the reach of lime, what could we do without guano? Surely, surely, it is a God-send to us. A few years ago, groups of scrubby pines stared us in the face, from the highways, on one side—whole fields of sassafras and broom straw were waving gracefully to the breeze on the other side and all around, the jetty blackberries were glistening, beautifully, in the sun. As the traveller jogged slowly along our roads he was often wont to ask—how live this people on such lands? And how did they live? They were the sons of sires made rich in olden times by the sale of tobacco and brandy; and in the beedless exhausting systems of cultivation, were fast consuming the patrimony of their fathers. But guano has come, and wrought a change; and such a change. Where once the scrubby pine grew, the broom straw waved, and the jetty blackberry glistened, the luxuriant corn now grows, the golden wheat now waves, and the beautiful clover now blossoms. Where once were seen the single plough, the scythe cradle, and the wheat ring, the triple plough, the wheat reaper, and the threshing machine are beheld. We have been roused up from our slumbers, and induced to practice systems of rotation, good ploughing, good hoeing and good guanoing, in place of the slovenly and excessive systems of old. As to the various modes of application, the subscriber has tried all, and

finds guano to answer well in spite of the mode. But, as moisture is indispensable to its solution and absorption, by the roots of crops, in deference to this principle of nature, it is best to harrow for winter crops, and plough deep for summer crops; the rationale being that there is absence of moisture at the surface in summer, when it may be present below. Harrow for wheat, plough deep for corn, is my motto. Did it ever occur to you, Mr. Editor, that guano elevated the small farmer with small means, to the level of the large farmer with large means? Let us see. There are a few farmers with us, as yet, sceptical, as to the profit arising from guano. Some of these own farms worth eight thousand dollars, and the average of their wheat crop is four hundred and fifty bushels; the cost of this crop to them, is one-third of the interest of the value of the farm, (because, the wheat crop is all of any crop that can be obtained from one-third of the farm, annually) which is one hundred and sixty dollars—four hundred and fifty bushels of wheat, then, will cost these farmers one hundred and sixty dollars, interest, on that portion of the farm producing the wheat crop. How is it with the small farmer and guanoist? One hundred and fifty acres of land at five dollars per acre; seven hundred and fifty dollars—interest on one-third: fifteen dollars—three tons of guano, at fifty dollars per ton—making one hundred and sixty-five dollars, cost of the wheat crop of the guanoist, on one-third of a farm, of one hundred and fifty acres. And what is the product of such a farm? Is it ever less than four hundred and fifty bushels, the product of the eight thousand dollar farm? No, never; but oftener five hundred, and five hundred and fifty bushels. Thus, without any allowance for extra seed wheat and labor to the small farmer and guanoist, his product is equal to the large farmer. In view of this profit arising to the guanoist; in view of the improved face of nature, and in deference to the call of mother earth, yet crying aloud, from a few galls and gullies, for food for her hunger, and raiment for her nudity—should not we all use it?

A. M. B.

New Town, King & Queen, Va.

For the Southern Planter.

#### SHEEP.

*Mr. Editor*,—I have read with very much interest a late communication in the Southern Planter, from Josiah W. Ware, of Clarke county, Virginia, upon the subject of sheep, and particularly the comparative merits of the "French Merino" and the Cotswold breeds, and am most wonderfully pleased with the account which he gives of his astounding success with the improved Cotswold. If what he says be true—and I have no right in the world to question, even, a word he utters upon the

subject, they are certainly, by far, the most profitable stock a man can have upon his farm. Now, so far as my limited experience goes, the business of sheep raising is not at all profitable, for if we, in this region can get two pounds of wool upon an average, and fifty pounds of meat from a mutton, at any age, we are pretty well satisfied with the yield—whether satisfied, however, or not, it is about all the most of us get. I should like to trade my whole flock to Mr. Ware for some half dozen of his improved Cotswold. Will he be so kind as to inform the readers of the Planter what the comparative expense of keeping them is, and what he can afford to furnish lambs at next fall; and how we, in Buckingham, are to get them from Clarke county. By giving the desired information, he will very much oblige one who read with much pleasure, and I trust with some profit—his very valuable communication.

M. L. A.

Buckingham, Va., March 28th, 1853.

For the Southern Planter.

## THE SCIENCE AND PRACTICE OF AGRICULTURE,

EXPLAINED BY WAY OF QUESTION AND ANSWER.

### Lesson Second.

#### NUTRITION OF PLANTS CONTINUED.

**Question.** What are the organic elements of plants?

**Answer.** Carbon, oxygen, hydrogen, and nitrogen. "With these four elements has a bountiful Providence composed the beautiful volume of the living world?"

**Q.** From what source do plants derive the three last named elements?

**A.** They obtain their oxygen and hydrogen from water and from the atmosphere, and their nitrogen from ammonia and animal matter.

**Q.** Which element forms by far the largest proportion of the vegetable world?

**A.** Carbon.

**Q.** Whence is this obtained?

**A.** From carbonic acid.

**Q.** What are the sources of carbonic acid?

**A.** Decomposing animal and vegetable remains, the breathing of animals, and the process of burning.

**Q.** How is the carbon separated from carbonic acid?

**A.** The carbonic acid is absorbed by the roots of plants, and transmitted to their leaves. When exposed to the light of the sun, it is here decomposed; one of its constituents, oxygen, being disengaged, the other, carbon, being retained for the purposes of the plant.

**Q.** Is any one ray of light more energetic in this process than another?

**A.** The purely green ray is known to be so much more potent in promoting the growth of plants than the simple announcement of the fact is all that is requisite.

**Q.** Is the reflection of any of the colored rays the result of any quality inherent in plants?

**A.** The natural and general impression is, that color forms a component part of natural objects; but it has been incontrovertibly proved that such is not the case.

**Q.** To what individual are we indebted for the discovery that color is not a specific property of bodies?

**A.** To Sir Isaac Newton.

**Q.** Will you give a familiar example evincing that color is not an inherent quality of plants; but that it is constantly varying, in obedience to the forces which act upon them?

**A.** During a long continued spell of wet and cloudy weather, the color of plants will be observed to pass from a more or less pure green to a yellowish shade. When the weather becomes dry and clear, they gradually resume their original tint.

**Q.** Do not the colors of plants vary also with the varieties of soil?

**A.** The deeper verdure of the foliage, in limestone districts, contrasted with the paler tint of granite formations, furnishes a striking illustration of this truth.

**Q.** Since then color is not a specific property of plants and the green ray of light so far surpasses the others in energy of chemical action, have we no means by which we can impart this very important property when deficient, and thus secure the uniform and permanent influence of this particular ray?

**A.** We have; in every instance in which ashes, lime, plaster of Paris, or any of the alkaline salts, have given evidence of their action—this evidence has been visible in the uniformly deeper green of the growing plants to which they were applied.

**Q.** Is this fact generally known and admitted?

**A.** It is the common proof—the test, by which their action is determined.

**Q.** Why then has not the principle to which these results so clearly point, been recognized?

**A.** "It not unfrequently happens, that the results of experience are extensively acted upon by practical men in reference to particular operations, long before the principle concerned in the arrangement be distinctly recognized, or its application to objects under other circumstances be deemed either possible or expedient. On the other hand, the scientific naturalist frequently receives the first hint of his generalizations from those who have confined their attention to effects merely, and who have marked those under peculiarly confined limits." Thus it is that science and practice become mutual contributors to the march of improvement.

**Q.** What does Dugald Stewart define to be

the highest, or rather, the only proper object of philosophy?

A. To ascertain those established conjunctions of successive events which constitute the order of the universe, to record the phenomena which it exhibits to our observations, or discloses to our experiments, and to refer these phenomena to their general laws.

Q. How is this mode of proceeding illustrated in the case before us?

A. When we cast our eyes over a field of clover, or other growing plants, there is exhibited to our observation a certain appearance, a certain shade of color, and this particular tint characterizes the field. If we now scatter over a portion of this field wood ashes, or lime, or plaster of Paris, there will soon be disclosed to our experiment a striking difference of appearance, a marked change of color—the plants have assumed a richer and purer green. The conjunction of these successive events has been long observed; it is indeed established by general consent. This being ascertained, the next step is to refer these particular phenomena, until the argument ends in the most general. Now there is no fact which has been more clearly ascertained, from observation and experience, than that the green color far exceeds every other in promoting the growth of plants. We have thus arrived at a principle—a general law, because our references cannot be carried any farther—in other words, it is the generalization of a fact.

Q. Why do we, not unfrequently, miss science?

A. From a misapprehension of its proper aim and end, we either stop short of it or look beyond it.

Q. Will you now recapitulate the series of events which appertain to the law of light in respect of plants?

A. First—the known absence of any quality in plants which would enable them to reflect, *per se*, either of the colored rays of light.—Secondly—their uniform tendency in all the primary soils, where the available alkalies are unequal to the demands of too frequent culture to reflect one of the colors, intermediate between green and yellow. Thirdly—the equally uniform tendency to reflect the pure green through the medium of the alkaline salts, either artificially applied, or naturally present in the soil in sufficient quantity. Fourthly—higher results under the third event in the series than under the second.

Q. How would you define the law?

A. The law is, that in the order of the universe, it has been so arranged by Creative Wisdom that the color of plants should be green—"the course of Nature, truly and properly speaking, being nothing but the will of God, producing certain effects in a continued, regular, constant and uniform manner." We further learn from observation and experience that with the reflection of this ray of light is constantly and uniformly associated the highest activity of their functions. Hence, it fol-

lows that every deviation from this color, whether inclining to the blue or yellow end of the spectrum, is the result of a disturbing force, which it should be our endeavor to prevent or to correct, and thus promote the great and beneficent design of the Lawgiver.

ALIQUIS.

#### For the Southern Planter.

#### EFFECT OF AGRICULTURAL CLUBS ON PERMANENT IMPROVEMENT.

*Mr. Editor*,—One of the By-Laws of the Prince George Hole and Corner Club requires that some article, selected from its proceedings or original, be sent to you monthly, for publication. We, the Committee, whose duty it is now to act under that resolution, send you the following, to be succeeded by *Experiment Accurately Tested, Reports upon Farms, and Essays*, if you may deem them worthy of a place in your most valuable paper.

We believe this the oldest Club in the State, and that several others have been formed upon its plan. Our Constitution is very similar to that of the Albemarle Club, published in your March issue; therefore we will spare you the trouble of its publication.

We meet once a month regularly, and as we have only twelve members, each farm is visited annually; upon such occasions, the farm is minutely inspected. Fences, stables, farming implements, stock, team, ploughing, sowing and reaping, all pass under review. After this close inspection, the Club return to the dwelling, and the President then appoints a committee of two members to write a report, which is to be handed in at the next meeting, upon all they saw, in which they freely criticise all mismanagement and applaud whatever they may deem worthy. If the members generally concur in this report, it is copied by the Secretary in a bound book.

In our walk over the farm, the members suggest any improvement, and make any inquiries and censure and approve "ad libitum."

We also discuss some agricultural topic in a conversational manner, and no other subject of conversation is allowed. Thus, you see, these meetings act as a grand stimulant to each member of our Club, and not only to him, but through him to his neighbor, who may not be a member; as we frequently find those not members betraying their rivalry by expressions like these: "Why, I beat any member of your Club in the yield of my corn." "None of you beat me farming, but so and so," naming one or two of our Club. But to give you more substantial proof of the benefit that has been derived from our association, we will cite the crops of the three members who offered last year for the premium. The first gentleman showed a profit per hand of \$302; the second, of \$235; the third, of \$283; after deducting

cost for all manures used during the year. Now we will contrast this report of crops for the year 1852 with the year 1845, (the year in which the Club was formed,) and also with their crops in the year 1850, at which time our President, in his annual address, stated that the gain in the crops of the Club had been 166 per cent.

The wheat crop of the three farms mentioned above are as follows:

Crop of 1845,	1850,	1852,
No. 1. 957 bush.	2,396 bush.	4,000 bush.
No. 2. 450 "	1,100 "	2,100 "
No. 3. 400 "	480 "	1,000 "

Showing an increase on No. 1 of 3,043 bushels; on No. 2, of 1,650 bushels; and on No. 3, of 600 bushels. The gain being upon the Nos. 1 and 2 much over 400 per cent, and on No. 3, 250 per cent. Now, do you not concede that these statistics are proof positive of the benefit of an enlightened system of farming?

Now, on the largest of these farms no guano had been used; on the next largest, only two tons. This we mention not to underrate guano, as it is becoming in general use with all our members, but to show you that the increase has been obtained by *substantial, permanent improvement* of the lands of our Club, and not by any quick and powerful stimulant, and that the capital in the lands of our Club have increased "pari passu" with our crops.

In a social point of view, our Club meetings have been equally felicitous—nothing having transpired to hurt the feelings of any one during the eight and a half years of our existence; but on the contrary, the bonds of good fellowship and neighborly love have been drawn closer and closer, until we are a band of brothers, consulting, advising and sympathizing in all our daily labors.

We send you this, Mr. Editor, as the precursor of other matter, which would be deemed by many of more practical and important use; but if we succeed by this communication in inducing others to unite in like associations, we *know* we would have achieved great good, and we fear your praiseworthy and laborious efforts to form a permanent and useful State Society will prove vain unless you can first induce the formation of these practical neighborhood Clubs, as we are a people who must either be made to feel the cash in our own pockets, or know it to have been in our neighbors', before you can get them to join in anything new to them; though the scheme may have proven ever so beneficial to others; for, alas! all the old book-farming haters have not passed away yet; but, we are thankful to say, that they are fast disappearing from our midst.

FABIAN ARMISTEAD,  
WILLIAM F. BOWDEN,  
JOSIAH M. JORDAN,  
CHARLES FRIEND,  
Publishing Committee.

For the Southern Planter.

#### CULTURE OF CORN, &c.

*Mr. Editor*,—I have been promising myself for some time to write you a short article on the culture of corn and the prospects of the wheat crop in this region.

Corn land should be broken up deep, say from seven to ten inches, and made fine with harrow, and if very cloddy the roller may be used to advantage. Corn rows should be four and a half or five feet wide. Seed corn should be wet and rolled in plaster, and if the land is rich, should be dropped from twelve to fifteen inches apart, three or four grains in a place. As soon as the corn gets three or four inches high, commence the cultivation as follows: run a one horse mould board plough, with the bar next the corn twice in a row; follow with a stroke on each side of the corn near the edge of the furrow made by the bar of the mould board plough, with new ground coulter, then thin and brush away the clods and small grass with the hoe, and put a hoe full of fine moist earth on each side, leaving one stalk in a hill. If the crop should be threatened with the cut worm, it would be best to leave at least two stalks in a hill for a week or two. After culture, should be as follows: run four times in a row with a wing coulter and throw the dirt to the corn, follow with hoes for the purpose of straightening up the corn, brushing about it, and putting a little dirt to it. After going over your crop in this way, there will be a *list* left in the middle of each row, which was made by the mould board plough in the first working. The next working, which I generally do after harvest, run about four furrows with wing coulter, so as to finish the middle of the row, and the work is done and the land left nearly level.

The wheat crop in this vicinity will be cut short more than one-half by the depredations of the *millions* of fly and joint worm that are now preying upon it. This is the third time we have been visited by the joint worm. I have seen some fields that a scythe will not be put into. But for the *guano*, many farmers would not make seed. Even this has failed to resist the attacks of the enemy in many places. Yours, &c.,

S. B. J.

Fluvanna, May 18th, 1853.

#### LOSS ON STOCK DRIVEN TO MARKET

Several days used formerly to be occupied in driving to the London market from the county of Norfolk only, and it was found that, on an average, a sheep lost seven pounds weight, and three pounds inside fat, and a bullock twenty-eight pounds. These weights were ascertained by a series of trials—average animals

being killed and weighed on the farm and compared with the weight of similar animals when slaughtered in London. This difference of weight was waste, entirely lost to every body. On the quantity of stock annually sent out by Mr. Hudson, of Castle Acre, a distinguished Norfolk farmer, the loss was equivalent in value to upwards of £600 a year, nearly the whole amount of which now finds its way to the market, as the stock are put into the trucks in the morning, and reach London in the afternoon without fatigue.—*Caird's Agr.*

The above, says the New York Farmer, is upon a subject of vast importance to the stock growers and graziers of this country, and one which attracts the attention more especially of drovers and dealers in cattle. It doubtless affects the agriculturists of this country to a far greater degree than in England and Scotland, to which the above extract applies, on account of the great extent of country, and the long distance over which the cattle have to be driven or conveyed to market. In years back, before the construction of railroads, the driving of cattle was a large and tedious business—the journey often extending over hundreds if not thousands of miles. From this State they are generally driven to New York, Brighton or Philadelphia. On the old turnpikes, during the fall, the drovers used to extend for miles, and public farms, with pastures for cattle as well as food and drink for the drivers, were to be found within sight of each other.

The loss on the cattle driven to market, depended, of course, very much on the travelling, the quality and quantity of the feed, and the care exercised in driving. But these *old times* have passed away and the occasion for long journeys, either for men or cattle by land, no longer exists. The railroads now supply the facilities for conveyance to market from all the New England States, New York, Ohio, and several of the other States. They are conveyed with great expedition and facility from the most remote sections of the country, and arrive at their destination in good condition and without the loss of flesh estimated above at seven pounds for sheep and twenty-eight pounds for cattle.

This is another of the many profits accruing to the agricultural interest of the country from the very general construction of railroads, benefits which the agriculturists are seldom the first to acknowledge, but must sooner or later appreciate.—*Wool Grower.*

From the Kentucky Cultivator.

## PHYSIOLOGY OF PLANTS.

### FUNCTIONS OF LEAVES.

The sense of the beautiful, in every beholder, receives an exquisite gratification in gazing upon the foliage, the mantle of living green, in which the vegetable world is arrayed during the season of growth and development. Few, however, are aware of the important functions which those countless leaves perform, in the growth of plants. To the common eye they but appear as the lavish ornaments which beautify the vernal landscape, and invest each tree and shrub with a garment of loveliness. Their secret but vital functions are disclosed only to the eye of science. They are to the plant what the lungs, the stomach and the skin are to the animal. It is through them that the important functions of breathing, digestion and perspiration are accomplished. Plants, like animals, breathe, digest their food, and throw off their surplus moisture, and perhaps a portion of the substances contained in their fluids, by perspiration; and those vital operations are all performed by the leaves which adorn them.

The *sap*, which is absorbed by the roots, constantly ascends up the vessels of the plant, during its growth, to the leaves. Here it undergoes a change analogous to that effected in the food of animals, in the process of digestion. The superfluous water is thrown off by the perspiration of the leaves, while that which remains is converted into the juice called the *true sap*, which, like the blood of animals, in its after circulation, furnishes the various substances found in plants.

The leaves, as intimated, are the perspiratory organs of the plant. The office of perspiration or transpiration is performed by the under side of the leaf, and may be almost entirely stopped by spreading varnish on that surface. The quantity of moisture thus thrown off is much larger during the day than during the night. Dr. Hales found that a cabbage transmitted daily a quantity of water nearly equal to half its weight.

The leaves of plants absorb from the atmosphere carbonic acid, in the form of gas. This acid is a combination of carbon or charcoal with oxygen, one of the constituent gases of the atmosphere. The acid is decomposed, the carbon being retained by the plant, and composing a large

part of its substance, while the oxygen is emitted. The absorption of carbonic acid takes place in the light, the influence of which is essential to the process. This fact explains the phenomenon that plants cease to grow, and that they languish and perish when deprived of light. It is ascertained that trees derive a large portion of their carbon or woody substance from the carbonic acid absorbed by their leaves from the air. Van Helmont planted a willow which weighed 5 lbs. in a pot containing 200 lbs. of earth. This he watered for five years, and at the end of that time the tree was found to weigh 169 $\frac{1}{4}$  lbs. while the earth in which it had stood was found to have lost only two ounces. From whence did the tree derive that large mass of carbon which constituted the chief portion of its increased weight? Undoubtedly from the atmosphere,—the carbonic acid absorbed by its leaves—the water with which it was supplied, holding a portion of carbon in solution, may have furnished a part of it; but the carbonic acid of the air must have been the chief source of supply.

Plants during the day emit oxygen, the vitalizing element of our common air, through their leaves. This is derived from the carbonic acid, as it is decomposed; for vegetables are found not to emit oxygen, unless carbonic acid be present. During the night the leaves of plants absorb oxygen, and form with it carbonic acid, a part of which they emit, and a part is retained.

By this process of absorption of carbonic acid by the leaves of plants the atmosphere is purified of that portion of it which, in the form of gas, is so noxious, and when concentrated, so fatal to animal life, it being the noxious air found in deep wells, and which arises in the fumes of burning charcoal. Thus is this substance in Nature, breathed into the atmosphere from the lungs of myriad animals, and diffused from the decomposition of animal and vegetable substances, and which, if not diminished, would render the air we breathe unfit to sustain life, absorbed and converted into the firm substance of innumerable trees and shrubs, while its oxygen is returned to the atmosphere to revivify it.

Finally, the leaves of plants absorb water, as well as carbonic acid and oxygen. It is found that a plant which is dying for want of moisture at the root, will revive and grow when a branch, with its leaves, is placed in a vessel of water. A beautiful illustration of this fact is also beheld, in the renewed greenness of the leaves, after

a summer shower; the parched landscape appears to smile with gladness, as if conscious of the blessing it has received.

For the Southern Planter.

#### GRAZING.

*Mr. Editor*,—In the interesting communication from Mr. R. T. Baldwin in the last number, he asks the question, “Is barn-yard manure indispensable to the preservation of the fertility of cultivated lands?” I will ask him another question: Is not judicious grazing indispensable to the preservation of the fertility of cultivated lands?

I well remember a conversation of some old farmers when Col. Taylor’s *Arator* made its appearance. The late Gen. Henry Young observed that Hochneck, a farm on the Mattapony, then belonging to the late Col. L. Smith, had been inclosed for a number of years, and grew less and less productive; and he thought the non-grazing system would impoverish any land. Hochneck has been grazed of late years, but it is to this time the most unproductive farm on the river. It will not produce wheat after corn, and only very poor crops of rye.

There is very little doubt that we can injure land by grazing too much and also by not grazing at all. Such has been my own experience and that of some others in the light land of Eastern Virginia. What say you, Mr. Baldwin, on the subject?

Yours respectfully,  
TEMPLE WALKER.

King & Queen, May 2, 1853.

For the Southern Planter.

#### BLACKBERRY WINE.

*Mr. Editor*,—It may not be known to many of your subscribers that they possess in the blackberry, grown so unwillingly by them in their fields, the means, at once, of making an excellent wine and a valuable medicine for home use. To make a wine equal in value to Port, take ripe blackberries and dewberries and press them, let the juice stand thirty-six hours to ferment, skim off whatever rises to the top, then, to every gallon of the juice, add a quart of water and three pounds of sugar, (brown sugar will do) let this stand in open vessels for twenty-four hours, skim and strain it, then barrel it until March, when it should be carefully racked off and bottled.

Blackberry cordial is made by adding one pound of white sugar to three pounds of ripe blackberries, allowing them to stand for twelve hours, then pressing out the juice, straining it, adding one-third part of spirit, and putting a

teaspoonful of finely powdered allspice in every quart of the cordial, it is at once fit for use.

This wine and cordial are very valuable medicines in the treatment of weakness of the stomach and bowels, and are especially valuable in the summer complaints of children.

As this is the season of such disorders, and as the blackberry will soon be ripe, I have thought it necessary to make known these recipes. Yours, &c.,

ECONOMIST.




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## THE SOUTHERN PLANTER.

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RICHMOND, JUNE, 1853.

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### TERMS.

ONE DOLLAR and TWENTY-FIVE CENTS per annum, which may be discharged by the payment of ONE DOLLAR only, if paid in office or sent free of postage within six months from the date of subscription. Six copies for FIVE DOLLARS; thirteen copies for TEN DOLLARS, to be paid invariably in advance.

Subscriptions may begin with any No.

No paper will be discontinued, until all arrearages are paid, except at the option of the Publisher.

Office on Twelfth, between Main and Cary Streets.

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All communications for the columns of this paper, and all letters of inquiry, to insure prompt attention, must be addressed to Frank: G. Ruffin, Shadwell, Albemarle County, Va.

All business letters connected with the Planter must be addressed to P. D. Bernard, Richmond, Virginia.

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It is indispensably necessary that subscribers ordering a change, should say *from* what, *to* what post office they wish the alteration made. It will save time to us and lose none to them.

We have given up all our space to contributors, leaving no room for ourselves. We do not know that this is to be regretted, but some persons thinking much more highly of the Editor than he does of himself, do not believe they have got the worth of their money unless he "states his views" in every number. For the benefit of such we make the explanation.

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### WHEAT AND TOBACCO CROPS.

From what we can learn the wheat will not be first rate any where, though generally it is a fair crop. But we are sorry to say, that in regions infested with the joint worm, it is very little if any better than last year, whilst the area of its depredations has sensibly widened. From that cause and fly combined, we learn that there will not be half a crop of wheat made in the Valley from the lower part of Rockbridge to Shenandoah; we hear also that it has done great harm in the neighborhood of Fredericksburg and has doubtless crossed the river and got into the Northern Neck. We know from actual observation that it has got into tide water on James River, for we ourselves saw it—gathered three heads of it—at Whitby, six miles below Richmond. It is just possible that the insect may have been in our crops always, and from its rarity may not have been noticed, though always apparent to close observation; but we think not. We fear it has just begun to migrate from the infected districts. The farmer who searches now may easily find it. On the outer edges of the field, most probably near an old stubble, a hedge row, a ditch bank, a fence, or woods, it may first be observed. It gives the wheat, at a little distance, the appearance of being slightly pulled down or bent by partridge pea, but on examination it will be found that it is bent by a knot at the joint, in which, at present, no maggot can be discerned. But this is only an evidence of the harm that has been done, and of itself constitutes a very small part of the injury.

We are sorry to say, that so far we have been unable to hear of any remedy for this thing. Several gentlemen in Albemarle and Orange wrote to Dr. Harris of Cambridge and offered him \$100 to come on and investigate

the habits and history of the worm, or fly rather, and point out a remedy; but he declined coming, on the ground that Dr. Cabell and himself had ascertained precisely what insect it was, and that no other remedy than those he had previously indicated could be adopted. Of those remedies the simplest was to burn the straw and stubble. This will not answer. The straw can't be spared, and the stubble won't burn.

The prospect for the tobacco crop is not a good one. There has never, we believe, been so great a scarcity of plants. In many cases they have been entirely destroyed by the fly, or bug, or, more properly, beetle; and many of our best planters have not yet begun to plant, and cannot begin until their more fortunate neighbors have secured "a stand." This has induced many to curtail their crops very considerably; and a few have planted their tobacco land in corn. This state of things exists as far as we can ascertain, over the whole tobacco region of Virginia and Carolina, and also in the tobacco districts of Kentucky. We therefore feel very confident that the Planter who has good tobacco still on hand, can afford to keep it until next season. If put up in keeping order it is bound to be a good speculation.

#### SAVING CLOVER SEED.

The correspondent who asks us to state the best mode of saving clover seed, including the threshing, is referred to the August number of the Planter for 1851, volume 11, p. 226. He will there find the whole subject fully and ably treated by a friend whom we engaged to do it. The article is well worth republishing, but the crowded state of our columns forbids it at present. As our correspondent says he has been a subscriber to the Planter for years, we hope he has preserved the numbers. If not, we shall be glad to hear from him again under his proper name.

#### ERRATA.

In the letter of Mr. Williams, published in our May number, for "4 lbs. of meal," read four *barrels*, and for "Horse and driver," page 142, read *hire of*, &c. In the premium list of

the State Agricultural Society, Branch VI., Class No. 2, for best broadcasting machine for sowing "grain," read for sowing *guano*. Class No. 5, for best straw-knife for cutting down "stalks" read *stacks*.

For the Southern Planter.

#### VIRGINIA STATE AGRICULTURAL SOCIETY.

##### *To the Farmers of the United States:*

The first Cattle Show and Fair of the Virginia State Agricultural Society, will be held in the city of Richmond, on the 1st, 2d, 3d and 4th days of November, 1853.

By the enlightened and public spirited liberality of the Common Council of the City of Richmond, the Society will be provided with most eligible and ample grounds within the corporate limits of the city, and with every requisite fixture for the accommodation of the Exhibition and Fair. These fixtures will be arranged in accordance with a well digested plan and design, so as to combine the utmost accommodation and convenience, with a tasteful and pleasing architectural effect.

The premium list of the Society here appended, will be found to contain a very extensive range of prize subjects, and the premiums offered are believed to be fully equal to those of any other society in this country, whether regard be had to the aggregate amount of these premiums, to the value of prizes assigned to individual subjects of competition, or to the variety of subjects embraced in the list. The Society throws open the field of competition for its prizes to the citizens of every section of the Union, and designs thus to invite, a free, spirited and generous rivalry in every department of the exhibition; on the sole condition that competitors shall pay the small fee required to place them on the footing of members of the Society, and that they otherwise conform to the regulations of the Fair.

Great care will be taken in the selection of judges or committees for awarding prizes; with an eye single to having the most competent and impartial persons to discharge the delicate and difficult functions of those offices.

The accommodation upon the grounds, will be ample and commodious for the use of exhibitors in every department. Hay and straw (subject, however, to regulation)

will be furnished gratuitously, for the use of all animals on exhibition.

We have reason to believe that the various rail road and other transportation companies, in this and the neighboring States, will extend their usual liberality, in passing free of charge, all animals and articles to and from the exhibition, and that their charges for persons going and returning will, also, be reduced.

Manufacturers of agricultural machines and implements of every description, are invited by a liberal scale of premiums, to join in the Exhibition and Fair: besides, there can be no better mode of bringing their various inventions and improvements to the notice of the public, and of insuring the reward due to their skill and enterprise.

**FARMERS OF VIRGINIA!** we appeal more particularly to you, as a matter of personal and professional, as well as of State interest and pride, to prepare for this first Exhibition!

Come from the East and from the West, from the North and from the South of *our glorious Old Dominion*. Come with your wives, with your sons and your daughters. Come with your horses, with your cattle, with your sheep and with your swine, with your implements of agriculture and with the products of your soil. Rally in mass, and come up one mighty host of farmers, inspired by the progressive spirit of the age. Come prepared to show what the agriculture of our State now is, and what you design it to be in that splendid future, in which, sloth will be a crime, mediocrity a reproach and ignorance a disgrace; and when knowledge and virtue, industry and abundance, wealth and happiness shall cover our goodly land "as the waters cover the great deep."

**LADIES OF VIRGINIA!** we call upon you to show forth your handy works in the various departments of household economy and manufactures, in horticulture and floriculture—in short, in all the domestic and rural arts which you know so well how to cultivate and to adorn; and above all, we crave your fair presence to impart the most potent charm, and to add the greatest splendor to our assemblage.

PHILIP ST. GEORGE COCKE,  
*Pres't Va. State Agricultural Society.*

The Executive Committee met at the Exchange Hotel on Thursday, the 19th of May, 1853. Present, Philip St. George Cocke, President; Booth, Irby, Boulware, Overton, F. G. Ruffin and Williams.

Wm. Allen, Esq. of Claremont, having obligingly tendered to the Virginia State Agricultural Society the use of his fields at Curle's Neck for the trial of Reaping Machines in the coming harvest:

*Resolved by the Executive Committee,* That Messrs. D. W. Haxall, E. Ruffin, Jr., A. P. Crenshaw, Robert Douthat, W. A. Selden, James B. Jones and Henry Cox be appointed a Committee to superintend the trial of Reaping Machines at Curle's Neck, on James river, during the coming harvest, and that the makers of all such machines be, and are hereby invited to send their machines there, and have them ready punctually at the time, to be hereafter more particularly designated.

*Resolved,* That Messrs. Wm. F. Gaines, M. D., John R. Garnett, M. D., Richard Irby, Edward O. Watkins, Ro. M. Taylor, Samuel Ball, and — Baylor of Sandy Point, be a Committee, with power to fill vacancies occurring in their own body—(not less than five of whom to act)—who, after testing, by a full and fair trial, the comparative merits of the different machines offered for such trial, on a plain and on an undulated surface, on wheat of a tall and luxuriant, as well as of a shorter and thinner growth, and also, if practicable, on wheat of a lodged or a tangled condition, shall award the premium of fifty dollars, offered by the Society, to the inventor whose machine, under the varied circumstances of trial, shall prove, in their judgment, the *best and most effective* in its operation, and that they make report to the Executive Committee of their award, setting forth the principal reasons which shall have influenced them in the premises; which report shall be read publicly, with the other reports on premiums at the Fair proposed to be held by the Society in November next.

The Common Council of the City of Richmond having, with commendable liberality and enlightened public spirit, tendered to the Virginia State Agricultural Society the use of eligible and commodious grounds within the limits of the City, and having likewise offered to erect the buildings and fixtures which may be found necessary for the accommodation of the Fair proposed to be held by the Society next fall,

*Resolved,* That the Executive Committee, on behalf of the Society, gratefully accept the generous offer of the City Council, and that the first Annual Cattle Show and Fair be, and it is hereby ap-

pointed to be held in the City of Richmond on the first, second, third and fourth days of November next.

*Resolved*, That the President be requested to correspond, at discretion, with gentlemen eminent for knowledge of practical and scientific agriculture, for the purpose of enabling him to appoint a suitable person who will engage to deliver the Annual Address before the Society in general meeting at the Fair.

*Resolved*, That the supplemental report of the Committee appointed to enlarge the Scheme of Premiums, &c. on Rules and Regulations for the Fair, be, and it is hereby adopted, and that the Recording Secretary be directed to publish the same in the Southern Planter and the newspapers of this City.

CH. B. WILLIAMS, *Rec. Sec'y.*

#### RULES AND REGULATIONS.

1. All members of the Society, and all persons who shall become members, previous to or at the Fair, will be furnished with badges which will admit them and their families to the Exhibition at all times during its continuance.

2. All exhibitors at the Fair must become members of the Society, or else be required to pay an entrance fee of three dollars to entitle them to that privilege, and, also, the privilege of admittance to the Exhibition at all times during its continuance. In every case, exhibitors must have their animals or articles entered at the Secretary's office before taking them into the inclosure.

3. All those who intend to compete for the premiums at the Fair, should have their animals or articles on the ground, on or before Monday, the 31st day of October, so that they may be arranged and in readiness for examination on Tuesday morning, the 1st day of November. This regulation must be strictly adhered to, otherwise the Society will not be responsible for the omission of any animal or article on the lists.

4. No animal or article entered for exhibition can be taken away before the close of the Fair, except by permission of a member of the Executive Committee; and no premium will be paid on animals or articles removed in violation of this rule.

5. Animals or articles intended for exhibition, will have cards attached with the number as entered at the Secretary's office, and exhibitors should, in all cases,

obtain their cards previous to placing their animals or articles on the show grounds.

6. All persons who intend to exhibit horses, cattle, sheep or swine; or who intend to offer stock for sale, should notify the Secretary of such intention at least ten days before the commencement of the Exhibition, and furnish a list and description of such stock, in order that suitable arrangements may be made for their accommodation.

7. On the first day of the Exhibition, none but members and their families will be admitted, in order that the Judges may have suitable opportunity of viewing subjects of exhibition, and when anything is exhibited to the Judges which they shall deem meritorious, but beyond their power to award a premium to, they shall furnish a note of the same to the Committee on Discretionary Premiums for their consideration and action.

8. On the succeeding days of the Exhibition, an entrance fee of twenty-five cents will be charged for persons not entitled to badges of free admittance, and for children under twelve years of age, under protection of their parents or others, half price.

9. Editors and their families will be admitted free.

10. The Agricultural Societies of other States, and District and County Societies within this State are invited to send delegates to the Fair. Such delegates will be furnished with a badge and admitted free.

11. The Annual Address will be delivered at 12 o'clock, M., on Friday, the 4th day of November, and immediately after the address, the reports of the Viewing Committees or Judges will be read and the premiums awarded and distributed.

12. The Executive Committee will take every precaution for the safe keeping of articles exhibited, and will be responsible only for loss or damage that may occur during the Fair from want of due care on the part of its officers, agents or servants. They desire exhibitors to give attention to their articles, and give notice to them of anything they may see amiss.

13. A marshal shall be appointed at a salary to be agreed upon, whose duty it shall be to see that the committees act on the articles belonging to their respective departments, to keep order, and execute the commands of the Executive Committee. He may call to his aid as many deputies as may be found necessary to give efficiency to his department—to whom reasonable

compensation will be allowed by the Executive Committee.

14. Chairmen of viewing committees are requested to be in attendance on Monday, the 31st of October, and report themselves to the marshal.

15. No premium shall be awarded unless the animal or article exhibited shall be deemed worthy.

16. No person shall be allowed to interfere with the judges while examining and comparing animals or articles submitted to them for adjudication. Any competitor so doing, with a view to unduly influence or bias their decision shall be excluded from receiving a premium. This regulation, however, is not to be so construed as to prevent competitors from freely giving to the committees any information which they may think proper to ask for.

17. The marshal and his aids shall give particular attention to the proper arrangement of all articles exhibited in their respective departments, point out the different articles or animals to the judges, and attach prize cards or flags to the successful animals after the judges' reports shall have been made up and delivered to the secretary, and duly certified to by the same.

18. Hay and straw will be furnished gratis for all animals entered for premiums, and grain will be provided at lowest cost price for those who desire to purchase.

#### PLOUGHING MATCH.

19. The ploughing match will take place on *Thursday* morning, the 3d of November, at 10 o'clock, A. M. on the most eligible ground which can be procured near to the place of the exhibition.

20. *All Experiments* submitted for premiums shall be compared as to merit, whether they relate to one or to different subjects. The superiority of merit or value of any experiment, or series of experiments, in comparison with others, will be decided in reference to the nearest approximation to the following conditions: 1st. The comparative extent and completeness of the processes of experiment, and the apparent accuracy of the procedure; and 2d. The clearness of the report.

21. *Essays*.—The form and manner of each is left to the discretion of the writer. The award of superiority will be made in reference to the probable utility of each writing to agricultural interests, as well as to the ability of the treatment of each subject. In matter designed to instruct or to guide practical labors, clearness and

fulness of details, will be deemed a high claim to merit—and next, conciseness.—Nothing necessary for direction should be omitted, and nothing included that can be omitted without injury to the value of the instruction.

22. *Best Farms*.—Competitors for these honors must furnish a sufficiently minute, yet concise general statement of the former and present condition and products, the mode of improvement and course of general management, so that the statement may be instructive to other farmers, who can avail themselves of the like means of improvement.

23. *Heaviest Average Product of Crops*.—To compete for these premiums it is required that the field producing the crop shall have been accurately measured, (by survey) and the crop also, if of grain, by cubic contents, or otherwise. Crops of grass, &c. may be estimated by the actual weight of a small measured space, not less than one twenty-fifth part of the whole field.

The general management of the crop in preparation of the soil, manuring and tillage, should be stated concisely in writing.

24. *Live Stock*.—The judges will be expected *in all cases* in making their reports, to give the *reasons of their decision*; embracing the valuable and desirable qualities of the animals, to which premiums are awarded; and in the case of fat cattle, which will be required to be weighed before they are placed upon the show grounds, they will take measures to give the superficies of each, as it is believed that all other things being equal, those are the best cattle that have the greatest weight in the smallest superficies.

25. *Machines and Implements*.—In judging of comparative merits, regard will be had not only to the effectiveness and importance of the operation, but also the durability and the cost of the machine or utensil.

26. Any animal, machine, or utensil, which shall have a premium awarded it once, as being the best of its kind exhibited, shall not thereby be debarred from claiming and obtaining the like distinction, so long as the particular subject shall still be deemed the best at subsequent exhibitions of the Society. But in such cases, after two premiums, in different years, may have been awarded to the same subject, any subsequent honor to the same may be a testimonial only of its continued superiority.

No other subjects except the above named shall obtain a premium more than once.

27. The kind of admissible testimony in the case of farming crops, experiments, &c. can not be described in advance. The committees for examining claims for premiums on subjects of this class, must judge of the value of the testimony offered, as well as of the value of the claim in other respects. As no other witness is usually available in such cases, the claimant must testify in his own case, unless he has obtained and prefers to offer the testimony of others also.

For the Southern Planter.

REPORT ON THE FENCE LAW,  
*Read before the Brunswick Agricultural Society at its meeting 16th March, 1853.*

Your Committee, to whom was referred the resolution of inquiry, "Whether any change or modification of the present law of enclosures was necessary, and if so, what are the best means of effecting the passage of such change or modification by the Legislature," have had the same under consideration, and beg leave briefly to report, that they have had reference to the various statutes upon this subject as far back as our Colonial House of Burgesses at Jamestown, under the reign of Charles I. in 1631-2, to the present revised statute of 1850. That in 1631-2 it was simply declared "that every planter should have a sufficient fence around his cleared land, or plant at his own peril." This mere declaration seems to have been regarded sufficient, and remained without amendment until 1646, when it was enacted that this sufficient fence should be  $4\frac{1}{2}$  feet high and close down to the bottom. When proven to be in that condition satisfaction for trespass and damage might be recovered, and to be awarded by two honest men appointed by a commissioner. If not in accordance to the statute, then damages to be recovered for injury done to stock, and if killed the offender to be assessed in double the amount of their value.

No material change seems to have been made until about 1819, when a fence to be legal, was required to be 5 feet high, or a ditch 2 feet deep and a fence upon that 2 feet high, which is the same as the present law. The important fact is hence presented that for upwards of two centuries

the only material change which has been made is the elevation of the fence six inches, or the substitution of a ditch, that in all other essential particulars the colonial law may be regarded in force, and certainly as summary in the recovery of damages as the present. That in 1646 was passed when the arable lands, or plantations, were mere specks in the wide heavily timbered forest every where presented to view, when necessity and interest prompted the laying waste of that forest; when there was no value attached either to wood or timber, and when, too, population and stock were few in numbers. That now a totally different state of the country is presented. That wide forest has well nigh yielded to the destroyer's axe, leaving in many parts of the State large tracts of land with but little, if any, durable material of enclosure. What remains is, for the most part, indifferent, perishable, and has often to be transported at long distances, with a remunerative value, for all sorts of timber and wood, and with an immeasurable increase of population and stock.

Your Committee cannot regard it either in accordance with the principles of sound legislation or with the dictates of reason, that almost identically the same law, passed in totally different states of the country can or ought to be relied on as efficient for the protection of that interest, now as extended and varied as a comparison of the two different conditions of the country. Nor does the present law, in the judgment of your Committee, with all the guards which legislative wisdom has sought to throw around it, answer the object of its passage. It is difficult, nay, almost impracticable, under its provisions, to secure an award of damages for trespass and injury. It is at variance with any improvement in the different breeds of stock, as it imposes little or no barrier to the ingress or egress of any lawless animal.

It is the cause of numberless feuds and broils in neighborhoods, and often of long, vexatious and expensive lawsuits.

It renders many tracts of land valueless because of the want of the material of enclosure, and in its hard exactions, secures often the injury, if not the ruin, of the widow and orphan.

It is subversive of any extensive improvement of our soil, as it admits the right of commons to all lands except enclosed by a 5 foot fence. It imposes an annual drain upon our scanty forest of the

best timber, now every where an article of profit and extensive and growing demand.

It entails the heaviest expense upon agriculture, in the labor of making and repairing fences, and especially afflicts the poor man in the difference of expense and labor in enclosing a large and small piece of land, and fixes upon him the certain destiny, as all experience and observation prove, of having to buy provisions for the greater part of the year, whilst in its executions it robs him of a just remuneration from his labor to pay for them.

It reverses the natural order of things, because it demands an enclosure of that which is armed with no property or power of injury, and turns loose with its only feeble barrier every warring enemy to the interest and labor of agriculture.

And, finally, may not a question of the unconstitutionality of the law itself arise in the mind of the enlightened jurist, inasmuch as this statute mainly repeals the great fundamental principle of the right to enjoy entire and undisturbed possession of property legally acquired, condemning, under certain contingencies, much of our lands to common use without any equivalent?

Your Committee are of the opinion that the present law of enclosures ought to be modified or repealed, and further believe if it should be totally repealed and no subsequent statute enacted, that the principles of the common law would afford a much better protection to the agricultural interest than it now enjoys.

Your Committee in closing their labors under the first part of the resolution, though not regarded as their duty, cannot forbear the expression of an opinion which they believe to be founded in truth, that if the present law of enclosures was examined in connection with taxation, the following results would be shown:

1st. That it imposes a quadruple tax on the planting interest.

2d. That the whole of that interest invested in fences cannot be less than fifty millions of dollars, requiring an annual outlay of six or eight millions to keep them in repair, amounting, in the aggregate, to more, it is believed, than all the houses in the State have cost.

3d. That if all the timber and labor in making and repairing fences were annually estimated, an amount would be shown sufficient to construct all the public works and educate all the poor in the State, and if applied to the payment of the State debt,

would extinguish it sooner than the most perishable panel of fence would rot down. That these facts ought to be sufficient to arouse the indignation of the people to demand of the Legislature redress from this onerous tax and grievance.

Your Committee approach the second part of the resolution with no little diffidence, inasmuch as many of the ablest minds in Eastern Virginia have been engaged for nearly half a century, in endeavoring to procure for the agricultural interest some amelioration from the hardships of this statute. Yet no desirable result has crowned their efforts. History presents no parallel to this question. It can no where be shown where freedom of the press and liberty of speech exist, that a measure practically embodying the highest interest of that best, noblest and most important occupation of man, aided, too, and pressed forward by the talents and influence of a country, should in this long time have made no advance towards success. Essay after essay has been thrown to the public through our agricultural and political journals, and numberless petitions have been sent to our Legislature, and yet no response ever made that even echoes a hope of success.

It is not the purpose of your Committee to review the many causes which have attended the failure of this important measure. The radical error, in their opinion, has been a too great reliance upon the Legislature, and a neglect to disabuse the minds of the sovereign people of the prejudices and misrepresentations with which this subject is surrounded. It will every where be conceded that the enlightened mind of Eastern Virginia has long been made up upon the necessity and utility of this measure, and the present condition of the question must be due to that neglect. Why then write essays when they are not read? Why send petitions to the House of Delegates when they neither command attention or receive respect? Your Committee believe the only way to treat the question is by constant agitation, and recommend that efforts be made through our Corresponding Secretary to secure the aid and coöperation of all the Agricultural Societies and Clubs throughout the State—

1st. To the establishment, in the city of Richmond or Petersburg, of a cheap penny paper, monthly published for gratuitous distribution, pledged to the modification or repeal of the present law of enclosures.

2d. That emissaries be sent out by the

different Societies and Clubs to address the people wherever an opportunity offers.

3d. That at a proper time candidates be brought out for a seat in the Legislature pledged to the passage of such a law as the friends of agriculture may require.

All of which is respectfully submitted,

H. B. WORSHAM,  
J. RAVENSCROFT JONES,  
WILLIAM B. PRICE.

For the Southern Planter.

#### DRAINING.

*Mr. Editor*,—The spring has arrived, and so far, brought but little promise to the farmer. For the continued rains, reaching from the close of the fall, through the winter, into the opening of spring, throws a damper on the spirits of all who derive their support from the soil. Who has looked upon the year as being so far fraught with promise? May we not want in vain some of the water we have been so surfeited with this past winter before the summer is over? However, it is unwise to grumble, though the best of us do. Let us rather hope that with a yet propitious season, the help of marl, guano, and other stimulants, the yield may not be so bad after all. But here again, some may complain that the excessive wet has stopped all marling operations. That is true; but maybe from necessity they have cut ditches where none were ever cut before, and thus "love's labor" has not been "lost." On the contrary, a wonderful deal of good has been done, to the surprise of those who thought they were working for the benefit of the elements. Men are more slow in awaking to agricultural improvement than any other of the time; and for some strange reason, are more tenacious of what their fathers did before them on this subject than any other. Because one's father never ditched a certain piece of land, they thought it useless—"The old man always got on very well." Granted. But how much better may not you do by opening your ditches, and arousing your energies. Because your ancestor drove a coach and four, and worked on his broad estate wooden ploughs with one miserable horse, and so died, leaving you debts and mortgages, is that any reason why you should not put four horses to a twelve inch iron plough, ride in a one horse buggy, and pay off "the old fellow's debts," without selling the old acres? Why, sir, that is what some have done; and more, let us hope, will do. These four horse ploughs amongst those who believed the "past better than the present," are as troublesome as were the ploughs of "Triptolemus Yellowlow" amongst the Hebrides a century ago.

A few years since, a young man came into possession of a farm, on which was a large

proportion of flat land and some swamp land. A certain piece of meadow, which for half a century had been held exclusively by the muskrats and sora, also was the source of much malaria, he drained, and after a time, commenced to break it up with a four horse McCormick plough, which did fair work.—When an ancient neighbor or two heard of it, forthwith they came to see the "marsh" ploughed. One said "you may try it, sir, but it won't answer." The other thought "the beds might be ploughed;" but at the next, the owner of the team "would wish them on high land." The result was that neither of them proved a prophet; but they went home angry. The landed proprietors of the past gave more, or as much, per cask for wine as we, their democratical descendants, pay per ton for guano. They of old improved their cellars. We, like the importers of the walrus into Britain, improve "our living stock." So that although we are not quite as aristocratical as they were, yet in real merit we are a shade ahead—and so hope we to progress. Now, in a moral point of view, can't say we are at all ahead; but as far as understanding things aright, and in making use of them, we are their superiors. Where they once had indigo mills, we now excavate and elevate man, exhume fossil remains of animals antecedent to Adam—when reptiles inhabited this earth of a size and shape not found in the Zoological Gardens, unless some of the denizens of the Nile are there—which would puzzle the anatomist to classify, as some of the super strata of earths do our chemists to analyze. Nevertheless, to get them (the earths) out of the way, they are put on the fields, and generally improve—the most satisfactory analysis to the farmer. It would be gratifying to know though, how much to put; if valuable, not to waste; and how far such would pay the hauling. Jupiter bid the clown, when his cart mired, to help himself—and so we must, too. Only the remoteness and inaccessibility of distinguished chemists is such, one would lose a crop before they could receive an analysis. We want enlightenment amongst our agriculturists, an agricultural science and mechanics. Go amongst the farmers of the tide-water, and you will find them shrewd, well informed on politics, and some highly educated men; yet you find them comparatively witless to improvement. The most highly educated as frequently as the uninformed, careless of, or doubting the application of science to agriculture. This should not be—yet it is. They are alive to steam on their rivers, and daily read the reports of the magnetic Telegraph in the papers. But any new manure, or improved mode of drainage, or labor saving farm implement, they croak about, and say it suits some parts, but here it will not answer. Why? Because your prejudices won't let you use it. When any "ism" or "ology" comes on from the North, they laugh, but they listen. A "table moving" will collect a neighborhood, a St. Lawrence trot-

ting pony stop a court green. But a new machine will have some few curious ones to pry around, whilst the rest either laugh at the examiners, or pass unheeding on. 'Tis said "when things get to their worst, they sometimes mend." The time for mending has come in agriculture, and every good citizen should contribute his mite, in some way or other, to shove it forward.

W. A. B.

March 10, 1853.

For the Southern Planter.

## TO KEEP TIRES TIGHT ON WHEELS.

*Mr. Editor*,—I wish to communicate to the public a method by which tires on wheel carriages may be kept tight. I ironed a wagon, some years ago, for my own use, and before putting on the tires, I filled the felloes with linseed oil; and the tires have worn out and were never loose. I ironed a buggy, for my own use, seven years ago, and the tires are now as tight as when put on. My method of filling the felloes with oil is as follows: I use a long cast iron oil-heater, made for the purpose, (a pattern of which I have left with Messrs. Taylor & Sowell, of Charlottesville) the oil is brought to a boiling heat, the wheel is placed on a stick, so as to hang in the oil, each felloe one hour, for a common sized felloe.

The timber should be dry, as green timber will not receive oil. Care should be taken that the oil be made no hotter than a boiling heat, in order that the timber be not burnt. Timber filled with oil is not susceptible of water, and the timber is much more durable. I was amused, some time ago, when I told a blacksmith how to keep tires tight on wheels, by his telling me, it was a profitable business to tighten tires; and the wagon maker will say, it is profitable to him to make and repair wheels—but, what will the farmer, who supports the wheelwright and smith, say?

If you think the above worth communicating to the public, you can do so; if not, throw it under the table.

T. H. BROWN.

Brown's Cove, March 23d, 1853.

Our good friend, Thomas H. Brown is well known to us as a man of very fine mechanical genius. He can make anything he pleases out of wood or metal, and whatever he advises is worth doing.—ED. SO. PLANTER.

For the Southern Planter.

## HORIZONTAL PLOUGHING AND THE HILL-SIDE PLOUGH.

## THEIR ORIGIN IN VIRGINIA.

*Mr. Editor*,—I received your note yesterday, enclosing a communication from Mr. N. T. Sorsby, of Alabama, asking information respecting the invention or introduction among us of the system of horizontal ploughing and the hill-side plough.

With respect to the former, the late Col. Thomas M. Randolph first practised it among us early in the present century—at least as early, I think, as 1810. He abandoned it for a time; beaten from its use by the storm of ridicule which the innovation encountered. In a few years, perhaps five or six, he resumed its practice, and persevered thenceforward in its use, till it gradually gained ground, and is now universal, I believe—at least through Eastern Virginia. This period will bring about the date mentioned by Mr. Jefferson, and quoted from "Plough, Loom and Anvil," by your Alabama correspondent. I have often heard Col. Randolph make this statement. While he was a member of our lately defunct county agricultural society, I think during his presidency of that body, he addressed a memoir to it on the subject of horizontal ploughing, embracing these facts. What has become of the memoir, I do not know, as the early records of the society, during the secretaryship of the late Peter Minor, have been lost. I am under the impression that he did not claim to be the inventor of the system, having, I think he said, witnessed the practice in Scotland, while in that country attending the medical lectures at Edinburgh, under the auspices of Cullen, Black, the Munroes, &c. Be that as it may, he certainly deserves the credit of having introduced it into Virginia, and the agricultural society of Albemarle recognised the fact by an unanimous resolution awarding him a piece of plate, with an inscription commemorative of it, and acknowledging the great benefit conferred by it on our agriculture.\* Perhaps you can ascertain among his family what has become of it. It will speak for itself.

\* I was myself the mover of the resolution, and with the late Th. E. Randolph and Th. W. Maury, constituted the committee to carry its object into effect. I mention this as giving some ground for a reasonable confidence in my statements, which, depending on a consciously failing memory, may stand in need of it.—F. C.

With respect to the hill-side plough, I never have heard that he (Col. R.) claimed for himself, or any one for him, that he was the inventor. I am under the impression that the invention is due to one of the Rhodes' of this county, (perhaps Ryland Rhodes.) Of this, however, I know nothing.

If I have been able to give you any information at all satisfactory, make use of it in any form you may see convenient.

FRANK CARR.

Albemarle, May 20th, 1853.

For the Southern Planter.

#### JOINT WORM.

*Mr. Editor*,—The Planter is just to hand, and so is the joint worm! Non nos-  
ceatur a sociis, say I; (is that the grammar for it?) Our early wheat was unusually promising, all headed; and behold! the destroyer is upon it! At present, to make a rough guess, I should say from six to eight stalks to a square yard, bent at right angles, with as pretty a knee joint as you ever saw; the proportion *may* be greater—it is certainly not less in my crop. But I have examined many of them, opened the knot and split the straw, and can see nothing in the shape of egg or fly; and the circulation and general condition of the whole plant, so far, seems to be perfectly healthy. I see no evidence as yet that guano is any safeguard, as our friend Barbour thinks; except so far as that the application producing a heavier yield, of course more is saved, unless *all* fall before the monster. I have a lot guanoed with upwards of two hundred and fifty pounds to the acre, where the destruction seems to be about the same in proportion as elsewhere. I enclose you a joint.

I hinted to you that I intended to "prent" some "notes" on the subject of Kettlewell's Renovator. I see Dr. Meaux has anticipated me, and as my own experience tallies so beautifully with his, I give it to you at once. In the fall of 1851, I applied five barrels of the renovator—which cost me at my landing twenty dollars—to about four acres of very poor land. By the side of it, I applied guano upon about ten acres, at the rate of two hundred pounds per acre. I did not measure, but am very confident that the four acres did not yield more than it would have done "on its own hook"—say five or six bushels of wheat to the acre; whilst the ten guanoed averaged

at least fourteen or fifteen bushels. There is now a stand of clover upon the whole; that from the guano greatly superior to the other. And I will mention here, though not properly belonging to the subject, that of the ten acres guanoed, there were six upon which I applied the guano mixed with plaster. I could not see *much* difference, but I thought there was a little in favor of the plaster—the clover on the plastered portion is certainly more vigorous than the other. Well, so much for the renovator *per se*. In the fall of 1852, I purchased a ton of the renovator, costing me twenty-five dollars, mixed it with half a ton of Peruvian guano, and sowed the mixture at the rate of three hundred pounds per acre. The difference between the crops now growing where this application was made and that produced by guano alone, at the rate of two hundred and two hundred and fifty pounds, is what any farmer, at all familiar with the effects of guano, would readily expect to see from the respective rates of one hundred, two hundred and two hundred and fifty pounds of guano. So, Mr. Kettlewell having pocketed some fifty dollars of my money, for which I have received nothing, he can take my hat. My old acquaintance, Dr. Meaux, has supplied him with a coat, and the rest of your subscribers can follow *suit*, if they (shoes) choose. (Excuse the pun, ladies.)

While my hand's in, I'll mention that I've taken one share in the "Artificial" Guano stock. The prospect of a dividend is very slim. I purchased the materials this spring for a ton; manufactured it according to directions, with the *addition* of another barrel of plaster and one of ashes. I sowed two-thirds of the ton on less than three acres of worn-out broomstraw sandy land, (about *double* the rate prescribed by Dr. Valentine.) By the side of it guano, two hundred pounds per acre, on three or four acres, same quality of land. The whole sowed in oats about the 20th of April. At this time, (May 14th,) the artificial is no more like the Simon Pure, "the stuff," as a neighbor of mine calls it, than chalk's like cheese. But I'll give you the *result* when I get it.

Till then, I am yours, truly,

G. F. H.

Elkora, May 14th, 1853.

Merit, like a virgin's blushes, will be most discovered when you most try to hide it.—*Exchange paper*.

## PAYMENTS TO THE SOUTHERN PLANTER,

From 25th April, to 1st June, 1853.

All persons who have made payments early enough to be entered, and whose names do not appear in the following receipt list, are requested to give immediate notice of the omission, in order that the correction may be made in the next issue:

W. Landrum to January 1854	\$1 00	Rand. Keatts to January 1854	\$1 00
Benjamin Vaughan to April 1854	1 00	J. D. Howle to May 1854	1 00
Wm. W. Eustace to January 1854	1 00	J. C. Clements to May 1854	1 00
James C. Roy to January 1854	2 00	Richard T. Green to January 1854	1 00
Dr. J. Duval to January 1854	2 00	Dr. C. Whitaker to January 1854	1 00
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James H. Chowning to January 1854	1 00	Robert A. Kidd to January 1854	1 00
Green Hill to January 1854	4 00	A. L. Anderson to January 1853	1 25
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Michael Whitmore to September 1853	2 00	Col. Thomas Perkins to January 1854	1 00
William M'Corkle to June 1853	1 00	William B. Jenkins to April 1854	1 00
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C. J. Meriwether, Jr., to May 1854	1 00	Preston Lipscomb to January 1854	1 00
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Thomas Wood to July 1853	1 00	Dr. Miles George to January 1854	1 00
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C. J. Craddock to March 1854	1 00	James W. Walker to July 1854	2 00
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Hon. Willoughby Newton to Jan. 1853	2 00	Rev. John Cook to January 1854	5 00
William S. Williams to April 1854	1 00	Capt. Thomas Hardin to January 1854	1 00
Isaac T. Brette to April 1854	1 00	Thomas H. Perkins to January 1854	1 00
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R. W. Goodwin to January 1854	1 00	Dr. J. M. Hurt to January 1854	1 00
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W. P. R. Leigh to April 1854	1 00	George E. Welsh to January 1854	1 00
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		Dr. B. F. Terry to January 1854	1 00
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		Rev. Alfred E. Carlton to January 1854	1 00
		Edward Carter to January 1854	1 00
		Thomas J. Stevens to May 1854	1 00
		Robert Tinsley to January 1854	1 00
		Z. D. Tinsley to January 1854	1 00

J. H. James to April 1854	\$1 00
Francis Modena to July 1854	2 00
Nathaniel W. Ford to January 1856	5 00
Dr. E. F. Gunter to January 1854	1 00
Dr. W. A. Smith to January 1854	3 00
William Murray to January 1854	1 00
James Woods to July 1853	1 00
C. P. M'Kennie to April 1854	1 00
Col. John R. Jones to January 1853	1 00
Charles G. Goodman to January 1853	1 00
R. W. Anderson to March 1854	1 00
M. B. Jarman to January 1854	1 00
James M. Wright to January 1854	1 00
A. M. Boulware to January 1856	10 00
Frank Fry to January 1854	1 00
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John Hendren to April 1854	1 00
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S. B. Jones to January 1853	1 00
J. Warwick to January 1854	1 00
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F. L. Royall to April 1854	1 00
J. D. Ligon to May 1854	1 00
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Rev. E. W. Roach to January 1851	5 00
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William Fretwell to April 1854	1 00
Howson C. Fowlks to January 1851	1 00
A. L. Anderson to January 1854	1 00
Dr. Charles Brown to July 1853	1 00
Allen W. Hawkins to January 1853	1 00

## THRESHING MACHINES, REAP-

ERS, &c.—The Subscriber continues to manufacture Stationary and Portable Threshing Machines, with or without horse-powers, made in the most substantial manner. He would call especial attention to his new portable horse-power, made to suit four, six and eight horses.

The Eight Horse Machine can be moved with a common farm wagon without changing the common body, and can be loaded or unloaded by three hands.

I am manufacturing the following valuable machines: Bamborough Wheat Fans, Behel's Patent Wheat Fan, and common Fans of different sizes—Straw Cutters, Corn Shellers, &c.; and have for sale the usual variety of Agricultural Machines.

Hussey and McCormick Reapers and Mowers, both highly approved and extensively used. Information furnished in respect to either on application by letter or otherwise.

H. M. SMITH,  
*Corner Main and 19th St's*

## NEW PLASTER AND BONE MILL.

THE subscriber offers for sale fine Ground and Calcined Plaster, both of the best and purest quality; he has also a Bone Mill attached, and intends to keep a supply of Ground Bones, fine and pure. Farmers and others are invited to call and examine for themselves. His prices shall be as low as the same quality articles can be bought for, North or South. The highest cash price will be paid for dry bones, delivered at his Mill adjoining the Paper Mill.

R. R. DUVAT,

## DR. VALENTINE'S RECIPE FOR MAKING ARTIFICIAL GUANO.

MAKING ARTIFICIAL GUANO.			
No. 1. Dry Peat,*	-	-	20 bushels
No. 2. Wood Ashes,	-	-	3 bushels
No. 3. Fine Bone Dust,	-	-	3 bushels
No. 4. Calcined Plaster,	-	-	3 bushels
No. 5. Nitrate of Soda,	-	-	40 pounds
No. 6. Sal Ammoniac,	-	-	22 pounds
No. 7. Carb Ammonia,	-	-	11 pounds
No. 8. Sulph: Sodaæ,	-	-	20 pounds
No. 9. Sulph: Magnesia,	-	-	10 pounds
" 10. Common Salt,	-	-	10 pounds

\* If peat cannot be obtained, use garden mould, or clean virgin soil instead.

**DIRECTIONS FOR MIXING.**—Mix Nos. 1, 2, 3, together—mix Nos. 5, 6, 7, 8, 9, 10, in four or five pails of water, or enough to dissolve the ingredients. When dissolved, add the liquid to the mixture, (1, 2, 3,) and mix as in making mortar. When thoroughly mixed, add No. 4, (the calcined plaster,) which will absorb the liquid and bring the whole to a dry state. Mix under cover in a dry place—pack so as to exclude air—observe the proportions in making small or large quantities. The above receipt will make one ton, which will manure seven and a half acres of land.

Having furnished the above to a number of farmers who have tested its qualities—many thinking it equal to natural guano—the subscribers have made arrangements to furnish any quantity during this season, and will sell the ingredients exclusive of the Peat, Wood Ashes, Plaster and Salt, (articles on every farm,) at the low price of \$10 per ton. One sugar hogshead will hold ingredients enough for five tons. All orders will be carefully and promptly executed, and sent to any part of the State. R. R. DUVAL & BRO.

Chemists and Druggists, Bank Square, Richmond, Va. oc-1f

**WILLIAM P. LADD,**

WILLIAM P. HALE,  
APOTHECARY AND DRUGGIST,  
No. 319, head of Broad Street, Shockoe Hill,  
Richmond, Virginia.

Richmond, Virginia.  
**D**EALER in English, Mediterranean, India and all Foreign and Domestic Drugs and Medicines; also, Paints, Oils, Varnish, Dye-Stuffs, Window Glass, Putty, &c. For sale on the most accommodating terms.

## TAYLOR'S PATENT HAMES.

PUBLIC attention is called to this valuable improvement in Hames, which is both simple and effective in design, from which numerous advantages result, both to the owner and driver of horses, being a saving of expense as well as time, as they can be fastened as readily in the dark as light, and can be done with gloves on. If a horse falls down or gets entangled in harness, by this improvement he can be instantly relieved. A boy, female or any one that is able to throw harness on a horse, can fasten the Hames very readily.

This improvement can be attached to hames now in use at small cost. These Hames were exhibited at the Maryland and Pennsylvania State Fairs and were universally approved of, and a premium was awarded them. These Hames and fixtures can be had only of the subscribers, MOTT, LEWIS & Co. Sign of the Plough, 3 doors below City Hotel, Richmond, Va.

fe-3t

## ANALYSIS OF SOILS, &amp;c.

THE undersigned is prepared to execute the analyses of Soils, Guano, Marls, Plaster, &c. &c. at the Laboratory of the Virginia Military Institute. Packages may be forwarded through Webb, Bacon & Co. Richmond, or Echols & Pryor, Lynchburg.

Persons desiring further information will please address

WILLIAM GILHAM,

Prof. Chem. and Agriculture, V. M. I.  
Feb. 1, 1852. Lexington, Va.

## CHOICE POULTRY.

THE subscriber offers for sale the following varieties of *pureblooded Fowls*, viz: COCHIN CHINA or CANTON FOWLS; BLACK, WHITE, BUFF and BROWN SHANGHAIS; CHITTAGONGS or GRAY SHANGHAIS.

The above are the largest and best variety of fowls bred in this country, and are from stock originally imported by the subscriber. Gentlemen, Poultry-keepers and others, desirous of procuring choice Poultry may depend upon the above stock being purely bred and warranted true to their name. Address

CHARLES SAMPSON,  
West Roxbury, Mass.

The different varieties of these beautiful fowls may be seen at my residence on First Street, between Main and Cary Streets.

W. A. BUTTERS, 139 Main Street.

Richmond, Nov. 1, 1852—1

## BOOKS, PIANOS, MUSIC, &amp;c.

NASH & WOODHOUSE, Wholesale and Retail Dealers in Books, PIANO FORTES, STATIONERY, MUSIC, &c. 139, Main St. Richmond, Virginia.

Constantly on hand, a full supply of standard AGRICULTURAL WORKS.

oc-tf

## ANALYTICAL LABORATORY

FOR THE ANALYSIS OF SOILS, &c.—The undersigned announces, that through the liberality of the Planters of the adjacent counties, there has been established, in connection with the Department of Chemistry in Randolph Macon College, an Analytical Laboratory, for the analysis of soils, marls, plaster, guano, minerals, &c., and for instruction in Analytical Chemistry. The Laboratory will be furnished with the most approved apparatus and choice re-agents, with every desirable facility. He has associated with him Mr. William A. Shepard, who was recently assistant to Professor Norton, in the Yale Analytical Laboratory, and who comes with ample testimonials of skill and capacity. Young men can pursue any studies in the College they may wish, while they are receiving instruction in the Laboratory. Copious written explanations will always accompany the reports of analysis. The charges for analysis and instruction will be moderate—the design being to make the Laboratory accessible to the people at large. Packages left with Messrs. Wills & Lea or Smith & Dunn, Petersburg, Virginia, will be forwarded, free of charge, to those who send them. For further information, address CHAS. B. STUART, Professor of Experimental Sciences, Randolph Macon College, Va.

oc-tf

## AGENCY FOR THE PURCHASE AND SALE OF IMPROVED STOCK.

STOCK Cattle of all the different breeds, Sheep, Swine, Poultry, &c. will be purchased to order, and carefully shipped to any part of the United States, for which a reasonable commission will be charged. Apply to

AARON CLEMENT, Philadelphia.

Refer to Gen. W. H. Richardson, Richmond, Virginia.

N. B.—All letters, post-paid, will be promptly attended to.

ap-tf

RIDGWAY SCHOOL.—The next session of my school will begin on the 15th of August, 1853, and end on the last Friday of June, 1854. There will be a vacation of three weeks at Christmas. The expenses of a whole session, including all charges for tuition, board, lodging, washing, fuel, lights, &c., are \$200. If a pupil is engaged for less than a whole session, I charge for the time he attends, at the rate of \$22 a month.

My whole time and attention are devoted to the school. I have two assistant teachers, Mr. W. N. Bronaugh and Mr. T. A. Minor, of whose qualifications I have the amplest assurance. Greek, Latin, French, German, Italian, Mathematics, the rudiments of Chemistry and Natural Philosophy, and all the branches of English are taught in the school. My Post Office is Charlottesville, Va.

je-2t FRANKLIN MINOR.

**MCCORMICK'S VIRGINIA REAPER  
AND MOWER.**

I AM now proving practically that in *every* respect Hussey's Machine is inferior to mine, as the question appears now to be between these Machines.

Some of the important points are, lightness of draught, speed at which the horses in Hussey's *must* be driven to insure efficient working of the machine, superiority of cutting apparatus and performance in damp grain or grass or other adverse circumstances, side or back delivery, &c.

Mr. Crenshaw, near Richmond, (to whom I am authorised to refer,) got rid of Hussey's Machine to get mine, with which he has now cut some 60 acres of clover, and is still mowing in a very satisfactory manner.

Wherever opportunities offer, I design proving in this way the superiority of my machine, as I have done in the West, where machines are sought for more of necessity, and where mine are sold by thousands to the almost entire exclusion of Hussey's, although Mr. H. went to Chicago, (my place) and with his partner established a large factory, from which he pretty soon made his escape, leaving only his *name* in large capitals on the building. His partner having abandoned Hussey's principle, is now (in a small way) infringing my principle.

Mr. H. M. Smith, of this city, has a few of my Machines for sale, and I should be glad to take half the field, (*rough* and *smooth*) and begin in the morning dew, and have an occasional *little shower*, and each of us a *pair* of good horses, and *see* how McCormick's and Hussey's Machines will compare, with as much variety as we can find. Farmers on James River who can afford good opportunities for such trials, will do me a favor.

My Machine and Hussey's worked *nine days* in the same hands upon the "Royal Agricultural farm," England, last season, resulting in a complete triumph in my favor. I will in this connection remark, that Manny & Seymour & Morgan, who are now offering Machines to the public, infringe my patents, and I now caution the public against these piratical concerns. I have *now* a large verdict against the latter.

I may be addressed at the Columbian Hotel, Richmond.

WM. S. MCCORMICK,  
for C. H. MCCORMICK.

June 1st, 1853.

P. S. Since writing the above, I have seen Hussey's handbill, in which he refers to the "Earl of Zetland," of the Cleveland Society, England, with a great flourish, as one of his Patrons. Lord Zetland is a distinguished man and agriculturist, and Hussey *knows* that *last* year his Lordship was so sick of his (*Hussey*) Reaper, that he applied to me to re-construct it, and ordered one of mine—Mr. Hussey and I both in the field at the time—Mr. H. being

armed with his *certificates* as usual. Should Mr. H.'s memory not serve him, I can furnish a copy of my pamphlet, widely circulated in England, a copy of which I sent Mr. H., containing Lord Zetland's testimonial in 1852—one year after Hussey quotes him.

When in England last year I challenged Hussey *repeatedly* to a trial *by the day* publicly, and invited him privately, but he was too *cunning* as well as too "modest" for such a trial. Finally, the Royal College (which had two of his machines) made the trial referred to of *nine days*. *je—it* W. S. McC.

**AN ESSAY ON CALCAREOUS MANURES,**

**BY EDMUND RUFFIN,** a practical Farmer of Virginia from 1812; founder and sole editor of the Farmers' Register; Member and Secretary of the former State Board of Agriculture; formerly Agricultural Surveyor of the State of South Carolina, and President of the Virginia State Agricultural Society; fifth edition, amended and enlarged.

Published by J. W. Randolph, 121, Main street, Richmond, Virginia, and for sale by him and all other Booksellers; fine edition, 8vo., printed on good paper, and strongly bound, library style \$2; cheap edition, 12mo. \$1 25—copies sent by mail, post paid, to those who remit the price.

A large proportion of this publication consists of new matter not embraced in the preceding edition. The new additions or amendments serve to present all the new and important lights on the general subject of the work, derived from the author's later observation of facts, personal experience and reasoning founded on these premises. By such new additions the present edition is increased more than one-third in size, notwithstanding the exclusion of much of the least important matter of the preceding edition, and of all portions before included, that were not deemed essential to the argument and necessary to the utility of the work.

"This work is from a Virginia gentleman, whose contributions to agricultural science have already given an extensive popularity. Mr. Ruffin is a practical farmer, of great intelligence, and is eminently competent to impart information on the subject, which has for so many years engaged his attention."—*Methodist Quarterly Review*.

The Southern Planter, in speaking about the cultivation of Irish potatoes and liming, says:

"But for the details of that business, we would refer our correspondent to a book, which if he has not now, we beg for his own credit that he will get as soon as he goes to Richmond. We mean the final edition of the *Essay on Calcareous Manures*."

"The farmers of Virginia have just reason to thank both the author and publisher for this enlarged and improved edition of a most valuable book."—*Hon. Willoughby Newton*.

*je—if*

## PLANTATION BOOK.

J. W. RANDOLPH, Richmond, Virginia, has just published the Plantation and Farm Instruction, Regulation, Record, Inventory and Account Book, for the use of managers of estates, and for the better ordering and management of plantation and farm business, in every particular, by a Southern Planter. Order is Heaven's first law—*Pope*. Price \$2, or six for \$10; a larger edition for the use of cotton plantations, price \$2 50.

**CONTENTS.**—Actual number of pounds to a Bushel of Wheat, Articles received for use of Plantation, Brick-Kiln, Births of Negroes, Balance Sheet, Cows, Cultivation, Contents of a Corn Crib, Clothing to Negroes, Diameter of a Horse Mill, Deaths of Negroes, Directions how to use this Book, Expenses and Sales for the Year, Form of a Contract with Manager, Force of a Draught Horse, Horses, Hogs, Instructions to Managers, Implements, Journal or Daily Record, Medicines, Manure Tables, Mechanical Power, Effect of the Labor of an Active Man, Inventory of Negroes, Oxen, Washington's Letters to his Steward, Plantation Management, Police, Ploughing Rules, Planting Distances, Physicians' Visits, Quantity and Value of Produce Made, Quantity of Work of a Man and Two Horses, Rules for the Government and Discipline of the Negroes, Rotation Tables for Cultivation of Crops, Rural Economy, Sheep, Steam Engines, Stock and Implements, Tools, &c. used by the Negroes, Weight of Materials, Weights and Measures, Wind Mills, Water Wheels, When a Horse Draws to Advantage, &c. &c.

There are extra sheets for monthly and yearly reports, for the use of those who do not live on their farms. The Book will be sent by mail free of postage to any one who will remit the price in money or postage stamps.

This Book is by one of the best and most systematic farmers in Virginia; and experienced farmers have expressed the opinion, that those who use it, will save hundreds of dollars.

"Every farmer who will get one of these Books, and regulate all his movements by its suggestions, cannot fail to realize great benefit from it. We cannot too highly commend it to the consideration of agriculturists."—*Richmond Whig*.

"It will prove a most valuable assistant to the planter, manager or overseer, and a work that will facilitate them greatly in the transaction of business."—*Richmond Dispatch*.

"The Book we should suppose to be indispensable to any one having the management of a large estate."—*Richmond Republican*.

"We hope many farmers will buy the work, and make an effort to keep things straight."—*Southern Planter*.

"It is full of useful information and is well calculated to induce a methodical system, industry and energy especially vital to a successful and profitable cultivation of mother earth."—*Richmond Enquirer*.

June—tf

## TO AGRICULTURISTS.

MORRIS & BROTHER have received the following valuable Books, pertaining to Agriculture:

Elements of Scientific Agriculture, or the connexion between Science and the Art of Practical Farming. This was the prize essay of the New York State Agricultural Society; by J. P. Norton, M. A.

Elements of Agricultural Chemistry and Geology; by Jas. F. W. Johnston.

American Agriculturist, for the Farmer, Planter, Stock Breeder, and Horticulturist; by A. B. Allen; numerous plates. The 8th and 9th volumes of this most valuable work are received, also complete sets. Every farmer should have this work.

American Farm Book, on Soils, Manures, Drainings, Irrigation, Grasses, Grain, Roots, Fruit, Cotton, Tobacco, Sugarcane, Rice, and every staple product of the United States.—This is a perfect farmer's library, with upwards of 100 engravings; by R. L. Allen.

Farmer's Manual, with the most recent discoveries in Agricultural Chemistry; by F. Faulkner.

A Muck Manual for Farmers; by S. L. Dana.

Farmer's Land Measurer, with a set of useful Agricultural Tables; by Jas. Pedder.

American Husbandry.—Series of Essays on Agriculture, with additions; by Gaylord and Tucker.

Farmer's Encyclopædia; by Cuthbert W. Johnson.

Productive Farming, with the most recent discoveries of Liebig, Johnston, Davy, and others.

European Agriculture, from personal observation; by Henry Coleman. This is a very popular work.

Johnson's Chemistry and Geology, with their application.

Johnson's Dictionary of Gardening; by David Landreth.

London's Gardening, for Ladies; by A. J. Downing.

Squarey's Agricultural Chemistry, Boussingault, Rural Economy, Buis's Kitchen Gardener, Landscape Gardening, and Rural Architecture; by A. J. Downing.

Fessenden's American Gardener.

American Fruit Book, with full instructions; by S. W. Cole.

Downing on Fruit Trees.

Theory of Horticulture; by Lindley.

Florist's Manual; by H. Bourne; 80 colored engravings.

Bridgman's Kitchen Gardener.

In addition to which, Morris & Brother have all of the late Works on Agriculture, Horticulture, and Raising Stock, of any celebrity.

Richmond, March 12, 1851.—1v

## NOTICE.

To those who have recently subscribed for the PLANTER, and requested us to send the back numbers from January, 1853, we are sorry to say, it is out of our power to do so. The back numbers (January, February and March) are entirely exhausted.

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## PURE BRED MALE STOCK

*At Private Sale at Mount Fordham, Westchester County, 11 miles from City Hall, New York.*

I WILL sell and let from 10 to 12 Short Horned Bulls and Bull Calves, 4 Devon Bulls and Bull Calves, and from 12 to 15 Southdown Rams. The annual sale by auction will be omitted this year, as I wish to reserve all the females, having recently purchased another farm to enable me to increase my breeding establishment. My Hog stock, including all the spring litters, are engaged. Catalogues, with full description and pedigrees of above Bulls and Southdown Rams, with the prices attached, can be obtained by the 15th April inst., from the subscriber or at any of the principal Agricultural Stores, or from the Editors of the principal Agricultural Journals.

L. G. MORRIS.

April 1, 1853—3t

## AGENCY.

I AM willing to assist gentlemen in purchasing and selling farms, stock, and poultry of every description; to attend to receiving and properly forwarding animals; also, to procure suitable overseers and laboring men for farmers and planters: all of which will be attended to for a small commission. My position as Marshal of the Maryland State Agricultural Society gives me advantages of knowing many men, and most good stock, which with my general knowledge of land induces me to extend the agency to land, men and stock. I have some fine farms to sell in Talbot county, and several in Baltimore county: subject to my order a number of prize animals, saddle and other stallions, and a few fine mares; Durhams, Devons, Alderney, and Ayrshire; pure long wooled sheep from the best flock in the United States; Chester and Suffolk pigs; Shanghai and other new and large fowls; also, two fine Jacks. All letters post paid, will receive prompt attention.

MARTIN GOLDSBOROUGH.  
*Harrisonville, Baltimore Co., Md.*

Refer to

C. B. Calvert & C. Hill, Washington City; G. W. Hughs, West River, Md.; J. N. Goldsborough, Easton, Md.; R. McHenry, Emer-ton, Md.; S. G. Fisher, Philada., Pa.; C. P. Holcomb, Wilmington, Del.; Col. J. W. Ware, Berryville, Va.; I. G. Wright, Wilmington, N. Carolina; J. W. H. Brownfield, Charleston, S. C.; McGill Robinson, Louisville, Ky.; Wm. A. Lake, Vicksburg, Miss.; Dr. Henry M. Robinson, Huntsville, Ala.; T. Hayward and Maj. R. Hayward, Tallahassee, Florida.

mar—tf

## CLASSICAL AND MATHEMATICAL SCHOOL.

RUMFORD ACADEMY, KING WILLIAM, VA.—This school is about two miles from Sharon Church, on the stage road between Richmond and Tappahannock. So healthful is the location, that but few cases of serious sickness have occurred in the school since its establishment in 1804. No expense is spared in providing for the physical comforts of the pupils; treated in every respect as young gentlemen, they are required to conduct themselves as such.

The subscriber, who has been engaged eight years in guiding and instructing youth, will be aided by competent assistants.

The usual English Course, including Chemistry and Philosophy, an extensive course of Mathematics, and the Latin, Greek and French Languages will be taught. A recess of one week will be given at Easter.

TERMS.—For board and tuition, with every necessary except lights and stationery, from 15th of January to 1st of July, \$84; payable one-half 1st of May, the other half 1st of July.

JOHN H. PITTS,  
*Aylett's P. O. King William.*

ja—tf